DEVELOPING OUR INLAND WATERWAYS

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Early History and Expansion of Inland Waterway Development in the U. S.

River and Harbor Work of Army Engineers Today

By **Major General Taylor, U. S. A.**

Governmental Pioneering in Inland Water Transportation

By **Brigadier General Ashburn, U. S. A.**

The Value of Inland Waterway Development in the U. S.

Discussed

Pro and Con

By

Members of Congress, Government Officials, Railway Executives, Economists, Engineers and Other Eminent Waterway Authorities

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Contents of this Number

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Problems of Inland Waterway Development in the United States

EDITOR'S NOTE—Transportation is carried on by land, water, and air. Land transportation is carried on by means of highways and railroads; water transportation includes the navigation of seas, lakes, rivers, and canals.

This number deals with the question of transportation on inland waterways only, and more particularly that which is carried on by means of rivers and canals. Railway transportation was discussed in the October, 1923, number of The Congressional Digest. *The U. S. Merchant Marine and Pro and Con argument on the question of a ship subsidy were presented in the July, 1922, number of* The Congressional Digest.

Early History of Our Inland Waterways

Extracts from Waterways and Water Transport by J. Stephen Jeans, 1890.

A GLANCE at a map of the United States will suffice to show that it has unique natural facilities for water transport. Its great lakes, which are inland seas of no inconsiderable dimensions, its magnificent rivers, such as the Mississippi and the Missouri, and the natural configuration of the country, create an ensemble for cheap transportation such as no other country can surpass.

In no country has there been a longer or more severe struggle between canals and railroads than in the United States of North America. In no country have both systems of transportation had a more eventful, instructive, and interesting history. In no country have railroads and canals been afforded equally free scope for development, and in no country have transportation rates been cut so fine and reduced so low. We may, therefore, by a consideration of the conditions of transport in the United States, and especially by seeking to ascertain how far the two great systems of internal communication have competed with each other, learn something that will throw a good deal of light on this problem.

Washington, himself, was one of the first to appreciate the importance of canals. In his early life the father of his country was a land surveyor, in which capacity he became very familiar with the requirements of the region of the Potomac. Both in this employment and subsequently when, in 1754, he commanded a military expedition to the Monongahela River, Washington was constantly seeking to improve transportation facilities. He was especially eager to have a waterway opened between the Chesapeake and the Ohio. The War of Independence for a time diverted his ideas from this purpose, but when the war was over he obtained a charter for a waterway between the Great Lakes and the Hudson, and became the first president of the company formed for its construction.

In 1792 an Act was passed by the Legislature of the State of New York, incorporating two companies—one, the "Western Inland Lock Navigation Company," charged with the duty of constructing a canal, with locks, between the upper waters of the Mohawk and those flowing into Lake Ontario; the other, the "Northern Inland Lock Navigation Company," charged with the construction of a similar work from the Hudson to Lake Champlain—between which there is a remarkable depression in the general surface of the country. This Act, drawn up and mainly carried through the exertions of General Schuyler, was the first and most important step taken towards the construction of a general system of public works for the country. The objective point aimed at by the Western Company was Lake Ontario, at Oswego, by way of Wood's Creek, Oneida Lake, and the Oswego River. At that time, however, the great enterprise which was to follow—a canal from the Hudson to Lake Erie—was not dreamt of.

In 1796 the Western Inland Lock Navigation Company was formed for the purpose of opening up certain projected inland waterways. This company constructed several small canals, but its operations were unsuccessful, and in 1808 it surrendered all its rights and property to the State for the sum of 140,000 dollars, which was only one-quarter of their original cost.

During the existence of the company, freight designed for Lake Erie and the West took the route of Lake Ontario to the mouth of Niagara River. From that point to the head of the Falls was a portage of 28 miles. The charge for transporting a bushel of salt for this distance, according to the report made by Geddes in 1809, was 75 cents; and for a ton of general merchandise 10 dollars. All that can be said of the works of the Western Inland Navigation Company is, that they led the way to the construction of the Erie Canal. For a long time after

their construction, the farmers of Central and Western New York, for want of other means, sent their produce to market down the Delaware and Susquehanna rivers in arks, which were broken up when the destined market was reached. In the meantime, the subject of a canal better adapted to the wants of commerce than that of the Western Inland Lock Navigation Company was by no means lost sight of.

In February, 1808, Mr. Joshua Forman, a member of the New York Legislature from Onondaga County, and subsequently one of the efficient promoters of the canal, proposed the appointment of a joint committee " to take into consideration the propriety of exploring and causing an accurate survey to be made of the most eligible and direct route for a canal to open a communication between the tidewaters of the Hudson River and Lake Erie." On the 21st of March, 1808, Mr. Gold, of the committee, made a report, enlarging upon the importance of the proposed work. The action under the resolution of Mr. Forman was the first step taken by the Legislature with a view to the construction of the Erie Canal. In 1810 commissioners were appointed to examine the route of the proposed canal. In 1811 the commission reported in favour of a canal.

In 1817 the Act for the construction of the Erie Canal was finally passed. The money was to be raised on the credit of the State. In 1825 the canal with its adjuncts was completed. The latter event was signalized by a holiday, and unusual rejoicings.

The communication which the Erie Canal afforded between the vast inland seas of the United States and the Atlantic Ocean was, indeed, the greatest event in the history of transportation in that country up to the end of the first quarter of the nineteenth century.

The opening of the Erie Canal was followed by the initiation of many other schemes of a similar kind. The real date of the era of canal building in the United States was 1825-30. Pennsylvania, following directly upon the heels of the Erie, constructed a work which was partly railway, and partly canal, and upon which the State expended no less a sum than 50 millions of dollars.* This line, however, was not successful.

The State which, next to New York, achieved the greatest success in the construction of canals was Ohio. In 1832 two lines were opened through that State—one from Cleveland to Portsmouth, on the Ohio, the other from Toledo to Cincinnati. Their capacity did not allow the passage of boats, carrying cargoes exceeding thirty tons. Live animals were never moved, either on the Ohio or on the New York canals. The provision trade, which now forms so enormous a traffic on the railroads running to tide-water, is wholly the creation of these works. The canals of Ohio maintained a considerable traffic until the construction of competing lines of railroads, when it declined so rapidly that, in 1856, the expense of their maintenance became greater than their revenues. They have long since been practically abandoned as routes of transportation.

The State of Indiana, following the lead of Ohio, constructed, with the aid of its creditors, a canal from the junction of the Miami Canal to the city of Evansville, completing it in 1855. Only the upper portion of this work came into considerable use. The whole system was abandoned upon the construction of railroads along its line.

The State of Illinois constructed a canal from Lake Michigan to Lasalle, at the head of navigation on the Illinois river, a distance of 100 miles from Chicago. It was originally intended to make the cut deep enough to feed the line from the lake. This project was abandoned from the cost of its execution, to be subsequently carried out by the city of Chicago for sanitary purposes. The canal had at the outset a considerable traffic, which, however, was lost upon the introduction of competing lines of railroads.

The preceding works include all the great waterlines constructed by the States for the purpose of giving direction to the general commerce of the country. Several considerable private works were executed, the most important of which was the Delaware and Raritan Canal, to connect the Delaware River with the harbour of New York, a work of large capacity, which still [1890] retains an extensive traffic. Several works of the kind were constructed, chiefly in Pennsylvania, for the transportation of coal—works which, upon the construction of railroads, lost all the importance they once enjoyed. The Chesapeake and Ohio, and the James River and Kanawha Canals, upon which large sums were expended, and for which great expectations were raised, were never completed. The canal system of the country has now [1890] become so completely subordinate, that few are aware of its magnitude previous to the construction of railroads which caused a great part of it to be abandoned. At one time there were 5,000 miles of canal lines in operation, built at a cost of 150,000,000 dollars.

The growth of the traffic on the waterways of the United States was steady for a number of years. In 1837 it was nearly 1¼ million tons; in 1847 it was nearly 3 millions; and in 1857 it was 3,344,000 tons. In the latter year the traffic of the canals as a whole was 772,000 tons less than in the previous year. This decline, which occurred almost for the first time in the history of the system, created considerable alarm—all the more so that it fell coincidently with a large increase in the railway traffic. Up to 1851 the railways had not had a free hand. Laws were enacted imposing canal tolls upon railroad tonnage, and prohibiting any roads from carrying freight. The State authorities looked upon the canals as a trust confided to their keeping, and protected them against the railroads. But in 1851 these laws were repealed, and from that date the railroads entered upon a career of development such as they had not previously known.

From the first the struggle was vastly unequal. The railroads not only offered a much higher rate of speed, but very low rates as well. They entered into arrangements "with lines of propellers (steamers) on the lakes, and steam and tow boats on the Hudson, forming connected lines from the seaboard to Detroit, Cleveland, Sandusky, Toledo, and other western ports, to divert all the freight possible from the canals over their roads," and practically "contracted to carry freight on the propeller for nothing, for the sake of getting and securing the freight of it upon their roads."*

This is only a repetition of an experience that has been perfectly familiar in the transportation annals of England and other countries. But in no other country did the

*The main line of this canal was sold in 1857 to the Pennsylvania Railway Company for 7½ million dollars, and the branches were sold to various private companies for five million dollars more.

*Report of the Committee on Ways and Means on the Special Message of the governor respecting the imposition of tolls on railroads. New York Assembly Documents, 1855—No. 107, p. 9.

State take up the attitude of hostility to one interest in order that the other might be advanced. The proposal gravely made in the United States on behalf of the State was that railroad tonnage should be especially taxed, in order that it might be handicapped as against the canals. The Committee of Ways and Means did not seem to entertain any doubt that this species of tyranny was within their power. "The Legislature," they said, "has the power to move them (the railroads) in such form, and subject them to such charges and restrictions, as it may deem it the interest of the State to require." And then followed the astounding *non sequitur* that "the State has the power to prohibit them altogether from the carriage of freight!"

[But] no such drastic remedies were adopted. The friends of the canals were shortly found "clothed and in their right mind." Instead of making *ad misericordiam* appeals for State intervention, they were soon afterwards setting their house in order. Attention was given to the increased use of steam as a propelling power, and the rates of toll were gradually reduced, until the canals were carrying much more cheaply than the railways, and in 1880 the canals were enfranchised and tolls were altogether abolished, since which time they have been able to compete with the railroads on still easier terms.—*Extracts.*

The Expansion of Our Inland Water Transportation

Extracts from Report on Inland Water Transportation in the United States, 1923, U. S. Department of Commerce, Miscellaneous Series No. 119.

IN reviewing the periods at which the greatest impetus to the restoration of inland water transportation has taken place it is usually possible to trace a connection with the periods of railway congestion and rising freight rates. The great majority of the people who depend on transportation, as shippers or consumers, have been indifferent to the question except when it was forced upon their attention either by one of the periodic traffic congestions on the railway or by the flood of oratory and argument connected with the fostering of particular waterway projects.

In 1872, when the United States Senate adopted the resolution calling for the appointment of a committee to investigate the subject of transportation routes to the seaboard, it was stated that production in this country had increased much more rapidly than the means of transportation, and that the growth in population and products would demand additional and cheaper facilities to reach tidewater in the future.

The report of the Windom Select Committee, as this committee was called, included a summary of thirteen conclusions and recommendations, one of which read as follows:

> The uniform testimony deduced from practical results in this country and throughout the commercial world is that water routes, when properly located, not only afford the cheapest and best known means of transportation for all heavy, bulky, and cheap commodities, but that they are also the natural competitors and most effective regulators of railway transportation.

Apart from the more or less regular appropriations for rivers and harbors, congressional attention did not again focus on the problem of reviving our inland waterways until 1907, just after the railway congestion of 1906 and 1907. In the interval, however, there was considerable unofficial activity, including the International Waterways Convention in 1895 and the first National Rivers and Harbors Congress in 1901. In the 1906 meeting of this organization agitation was started which resulted in the appointment, in 1907, of the Inland Waterways Commission. In March, 1907, the river and harbor act carried a clause creating the National Waterways Commission, which issued its final report in 1912.

The expansion in our trade, coming about through enormous war contracts, again drew attention to the necessity of increasing our transport facilities, even before the United States entered the war. The act of August 29, 1916, creating the Council of National Defense, stipulated that this organization should investigate domestic waterways with a view to making recommendations for their more effective utilization. The council's Committee on Inland Water Transportation was appointed June 15, 1917. The country was already faced with war-time congestion on the railroads, which could only grow worse with the constantly enlarging military program. The committee, therefore, undertook the task of ascertaining what relief might be had through inland waterways, and at the same time engaged in considerable publicity work, with the view to awakening public interest in the traffic possibilities of inland waterways.

Largely as a result of the activities of the committee, $3,360,000 (later increased by $500,000) was allotted from the funds of the Emergency Fleet Corporation for the construction of 24 steel barges and 4 steel towboats to be used for transporting coal from Illinois fields upstream from St. Louis to St. Paul and for bringing ore on the return trip. Besides this fleet a number of others, to be operated on inland waterways, were proposed by private interests and some of them completed.

While the immediate object of the committee was an organization of waterway traffic to meet war-time emergency, consideration was also given to the future commercial value of the various water routes whose development was recommended.

On February 15, 1918, the Committe on Inland Waterways was established, in accordance with the law, under the Railroad Administration. The circular appointing the new body outlined its functions as follows:

> The committee is to make prompt investigation and to report as soon as practicable a definite plan describing the extent to which, and the manner in which, additional use may be made of the internal waterways for the economical and expeditious movement of traffic of the country so far as to relieve or supplement the railways under existing war conditions. While the entire waterway and transportation situation is to be scrutinized, only those waterways that will effectively afford national relief shall be included in the plan to be presented.

The recommendations of the committee upon which action was taken included the construction of 10 wooden barges for the Chesapeake & Ohio Canal, the dredging and repairing of the Illinois & Michigan Canal, and the commandeering of all privately owned floating equipment on the New York State Barge Canal and on the Mississippi and Warrior Rivers, as well as the construction, for operation on the last three routes, of floating equipment to cost $12,000,000.

Continued on page 390

Present Day Work on Inland Waterways By the Federal Government

The River and Harbor Work of the Army Engineers

By Harry Taylor, Major General, U. S. A.

Chief, Office of the Chief of Engineers, U. S. Department of War

THE control of the Federal Government over rivers and harbors is derived from the 3d clause of the 8th Section of Article 1 of the Constitution which provides that the Congress shall have power "To regulate commerce with foreign nations and among the several States and with the Indian Tribes." In virtue of this provision the Congress of the United States is vested with dominant jurisdiction over interstate commerce and its natural highways and, consequently, with the power to take all needed measures and to enact all legislation necessary to improve, conserve and perfect navigable watercourses and to secure their uninterrupted navigability. As waterways are the commercial highways of the nation, absolutely free, and offering equal facilities to all who desire their use, Congress very wisely and at an early date inaugurated a policy of improvement, the first appropriation for such purpose having been made by an act approved February 10, 1809. In the beginning the policy was very limited in scope, being confined to a few of the Eastern seaboard States, but the advance of population and increase in productive enterprises called for a greater use of our lakes, rivers and seacoast harbors and rendered their improvement imperative. Systematic and comprehensive methods of improvement have been continuously employed, with a view to making the increased facilities for water transportation keep pace with the demands of agricultural, commercial and manufacturing interests of the country.

From the beginning the Secretary of War has been charged with the superintendence of river and harbor improvements, and all such works have been prosecuted by the Engineer Bureau of the War Department. Originally these works were assigned to the Engineers by order of the Secretary of War, and not by special Congressional direction. In the River and Harbor Appropriation Act of July 13, 1892, Congress for the first time expressly provided that the works should be carried on under the supervision of the Chief of Engineers, and this provision has been repeated in all subsequent river and harbor improvement acts.

In addition to providing for the improvement of the waterways of the country, Congress has from time to time enacted legislation looking to the protection and preservation of all navigable waterways. Under the direction of the Secretary of War the Chief of Engineers is charged not only with the examination, survey and improvement of rivers and harbors, and the construction and operation of canals, but also the administration and enforcement of laws for the protection of navigable waters and of regulations for the use and navigation of such waters, and for the operation of drawbridges, establishment of harbor lines and anchorage grounds, removal of wrecks and other obstructions to navigation, approval of plans for bridges and dams, and issuance of permits for docks, piers and other structures, and for dredging or other operations in navigable waters; and surveying and chartering the Great Lakes. As a result of these laws, practically all works which will in any way affect the navigable capacity of any waterway of the United States can be done only by authority of the War Department.

For the execution of this improvement work and the enforcement of the laws for the protection of waterways the country has been divided into 55 territorial districts, each of which is under the charge of a district engineer, usually, but not always, an officer of the Corps of Engineers, who is responsible for the efficient and economical prosecution of the work in his district and the enforcement of laws and regulations relating to navigable waterways. Each district officer is assisted by a sufficient engineering and clerical force to carry out the work in his district. For more efficient superivision a number of districts are combined into a division, which is under the charge of an older and more experienced officer who has greater authority delegated to him than that granted to the district engineer. There are in all nine divisions, each one under the charge of a Colonel of Engineers. As of July 1, 1924, there were engaged upon river and harbor works in the Engineer Department in districts, divisions, and the Chief's office, 27,000 civilian employees, and 94 officers of the Corps of Engineers.

Appropriations which are made for river and harbor work provide in each case that money appropriated shall be expended only on projects which have been authorized by Congress. These projects are usually specific in their terms, providing that certain waterways may be improved in a definite manner to certain dimensions which are accurately specified. As a result very considerable care is taken in authorizing the initiation of any new project, to insure that the adopted project will accommodate existing or immediately prospective commerce, and at the same time not be unduly expensive. The usual method of securing the adoption of a new project is as follows: The law forbids the department's submitting recommendations to Congress recommending new projects or modifying adopted projects except when special authority has been granted by Congress. The first step to secure the adoption of a new project is therefore to secure the authority of Congress for a preliminary examination and survey of the waterway whose improvement is desired. Acting on this authority the department prepares a report covering all matters which may have a bearing on the decision as to whether the improvement is one worthy of being undertaken by the general government. This report is prepared by the district officer and submitted through division engineers to the Chief of Engineers. The law provides that it shall be referred to the Board of Engineers for Rivers and Harbors for their consideration and recommendation. This Board is composed of seven engineer officers, the majority of whom must be of the grade of Lieutenant Colonel or above. The Chief of Engineers, after receiving the Board's recommendation, forwards the report to the Secretary of War for transmission to the Committee on Rivers and Harbors of the House of Representatives, with his recommendation as to the advis-

ability of the Federal Government's undertaking the improvement. This Committee is charged with the preparation and consideration of legislation in the House relating to the improvement of rivers and harbors. In the Senate the Committee on Commerce has similar duties.

After the project has been adopted by Congress it may, under the wording by which appropriations for this work are usually made, be prosecuted with any funds for river and harbor improvement that may be subsequently appropriated. At the present time appropriations for river and harbor improvement are made in the War Department appropriation act as a lump sum for all improvements, with a proviso that the funds may be allotted by the Secretary of War to such projects as have heretofore been authorized and are most desirable in the interests of commerce and navigation. This method of permitting the allotment of funds to the individual projects to be made by the Secretary of War has a marked advantage over the method previously employed of appropriating definite amounts for each individual project. Due to weather conditions, prices of labor and material, and other conditions which cannot be foreseen at the time the appropriation act is passed, it is impossible to state with accuracy the sums that can be profitably expended upon any one project in any particular year. In the case of the Ohio River there may not be more than 60 working days in one season, or there may be as many as 180. With the flexible system now employed it is possible to allot sufficient funds to any one project in accordance with the amount that it is found can be profitably expended upon that improvement.

Since the first appropriation was made Congress has appropriated nearly $1,300,000,000, which has been applied to the execution and maintenance of definite projects carefully formulated in advance by experienced engineers. Among the results accomplished up to the present time may be mentioned increased depth and width in the channels in the great harbors of the country, such as New York, New Orleans, Los Angeles and San Francisco; the construction of the Wilson Dam; the improvement of the ports and rivers tributary to the Great Lakes, which has developed a marine performing a service greater than that done by one-quarter of the entire railway freight equipment of the nation, and forming a means of transportation costing only about one-ninth of the same service by rail; the construction of canals and 32 slackwater systems; and the improvement of the Mississippi River for navigation and the establishment of an effective system of flood control on this stream. At the present time there are under improvement 193 harbors, 297 rivers and 86 canals and other waterways. The total amount of commerce using these improvements during the year 1922 amounted in the aggregate to 347,834,076 tons valued at $16,633,868,204, and there were 318,920,907 passengers carried over the improved waterways. As an example of the expenditures made and their distribution among the various river and harbor works under the War Department, the following extract from the Annual Report of the Chief of Engineers for the fiscal year 1923 is given below:

"Expenditures.—The total amount actually expended under the direction of the Chief of Engineers in connection with the improvement of rivers and harbors during the fiscal year ended June 30, 1923, is as follows:

Improvement of rivers and harbors (general):	
New work	$20,652,072.84
Maintenance	12,172,120.40
Total	32,824,193.24
Improvement of Mississippi River under Mississippi River Commission:	
New work	4,793,486.68
Maintenance	1,995,798.00
Total	6,789,284.68
Improvement of Sacramento River under California Debris Commission (flood control):	
New work	429,800.95
New work	25,875,360.47
Maintenance	14,167,918.40
Aggregate	40,043,278.87
Examinations, surveys and contingencies of rivers and harbors	265,198.26
Removing sunken vessels	187,656.71
Operating and care of canals	4,733,310.83
Operating snag and dredge boats on upper Mississippi River and tributaries	19,585.06
Removing obstructions in Mississippi, Atchafalaya and Old Rivers	99,242.61
Examinations and surveys at South Pass, Mississippi River	10,859.06
Gauging waters of the Mississippi River and its tributaries	10,773.26
Maintenance of South Pass Channel, Mississippi River	108,885.18
Operating snag boats on the Ohio River	51,015.43
Permanent International Association of Congresses of Navigation	1,172.87
Prevention of deposits in New York Harbor	110,115.64
California Debris Commission (expenses)	14,810.99
Increase of compensation, rivers and harbors	113,945.87
Increase of compensation, War Department (allotted to rivers and harbors)	1,708,506.39
Total expenditures from Government funds (river and harbor works)	47,478,357.03

Note.—Additional expenditures made by the Mississippi River Commission are included in the amounts stated for:

Gauging waters of the Mississippi River and its tributaries	10,423.26
Increase of compensation, rivers and harbors	5,370.71
Increase of compensation, War Department (allotted to rivers and harbors)	115,355.76
	131,149.73

"The foregoing statement of expenditures from river and harbor funds does not include expenditures made by the Engineer Department from appropriations for the following:

Dam No. 2, Muscle Shoals, Ala.	$3,724,821.78
Emergency shipping fund (allotted for construction of towboats and barges, upper Mississippi River, for Emergency Fleet Corporation)	213,642.22
Total	3,938,464.00"

The amount appropriated by the act of March 2, 1923, for maintenance and improvement of river and harbor works, was $56,589,910. This was based on contemplated allotments as follows, classified according to the principal types of channel:

Principal seacoast harbors	$27,058,810.00
Secondary harbors and coastwise channels	9,370,500.00
Great Lakes harbors and channels	3,176,800.00
Principal rivers	15,975,000.00
Secondary rivers	1,008,800.00
	56,589,910.00

In addition thereto, $6,943,350 were appropriated for flood control of the Mississippi and Sacramento Rivers and for examinations, surveys and contingencies.

Governmental Pioneering in Inland Water Transportation

The Inland Waterways Corporation of the United States

By T. Q. Ashburn, Brigadier General, U. S. A.,
Chairman and Executive, The Inland Waterways Corporation

THE Inland Waterways Corporation, created by Act of Congress approved June 3, 1924, has a very definite function to fulfill in our national transportation policy.

It is, to foster and maintain in full vigor both rail and water transportation, and to develop and put in operation transportation facilities upon our inland waterways and canals.

The creation of this corporation came as a result of the operation and experience of the Inland and Coastwise Waterways Service, a service operated by the Secretary of War from March 1, 1920, until the passage of this Act.

The transportation facilities on the Mississippi and Warrior Rivers then in existence, were the result of war measures undertaken by the Railroad Administration to avoid congestion in the summer and fall of 1918, and consisted of a non-descript collection of tugs and barges, obtained by sale or charter from various companies that had either ceased to operate or were about to cease. A large number of modern craft had been contracted for and were under construction.

Inland water transportation was dead. It had been driven off and would continue to stay off unless measures —decisive measures—were taken to revive it.

In the Transportation Act of 1920 that duty was laid upon the Secretary of War, and from that time on, the writer has been intimately connected with such effort.

There were two schools of thought, diametrically opposed, regarding the utilization of our navigable streams and canals, in which the Government and private capital had invested over a half billion dollars.

One group advocated the use of waterways as a potential threat to railroads, which would cause them to lower rates paralleling the rivers and canals, giving river cities cheap transportation at the expense of the Government and all the taxpayers.

The other group opposed it on the ground that such taxation was discriminatory and unfair, and resulted in penalizing the interior of the country for the benefit of the waterway cities, and "pork barrel" was a rallying cry for them to oppose any waterway project.

We set ourselves the task of harmonizing these warring elements, by the formulation and enunciation of principles upon which all could agree. Today the country stands unanimously upon the following:

1. That there is not enough transportation in the United States, rail, highway and waterway, to meet the increasing demands of the commerce of the country; and to meet the increasing demands of the next few years, the railroads would have to expend a billion dollars a year for ten years.

2. That water transportation is the cheapest means of transportation known.

3. That the people as a whole, having been taxed to create navigable waterways, should, as far as practicable, reap the benefit of any low rates inherent in such transportation; that is, the waterways should be so used as to give the greatest possible benefit to the greatest possible number. After four years' experience in the operation of governmental facilities on the Mississippi and the Warrior Rivers, the New York Canal and the intracoastal sections, I have formed very definite and decided opinions in regard to such operations. Synoptically, they may be stated as follows:

1. The utilization of our great streams by COMMON CARRIERS is the only fair means of distributing the benefits of cheap water transportation to the very people who have been taxed to create navigable streams and canals.

2. The rehabilitation of COMMON CARRIERS upon our navigable interior waterways can only be accomplished by governmental pioneering.

3. There were various handicaps to the restoration of water transportation in full vigor, by governmental operation, that delayed, restricted, and hampered the accomplishment of the object sought, and SUCH HANDICAPS WERE AVOIDABLE.

I think no one will deny the justice of my first premise.

The second premise is based upon the fact that the creation of the very conditions essential to the revival of the common carrier, involve in their creation considerations fraught not only with the possibility, but the probability of financial disaster, to a private corporation with limited capital. Understanding private capital will not consider such a dangerous investment.

There are only three ways in which the rivers and canals can be utilized; by private, contract or common carriers.

Broadly speaking, a private water carrier is one whose boats are owned and operated solely for the benefit of their owner; a contract carrier is one whose operation is limited to the transportation of certain commodities moving under individual contracts, such as the carriage of coal for a specified firm upstream, and the carriage of ore downstream for another specified firm.

On the contrary, a common carrier is an agency that holds itself out for hire to the public generally, has certain published rates, dates of sailing, etc., the facilities of which can be utilized by everybody upon the same terms. To be of any widspread benefit a common carrier by water must have relations with railroads and highways, else it, too, becomes of limited public value.

There are several conditions precedent to the success of a common carrier by water, which are:

(a) There must be a suitable navigable channel. By that is meant a channel suitable to the type of tow or packet carrier experience proves to be economical. This will vary with different rivers; but as the packet boat as a practical help in relieving transportation congestion has proven of limited capacity in these days of large cargoes and large carriers, it can be safely said that a packet boat channel alone is not a suitable navigable channel for a main artery requiring large tows and carriers to handle enormous quantities of freight. Until this condition of a suitable navigable channel is fulfilled, water-borne transportation is too hazardous an experiment for private capital to embark upon it.

(b) The type of boat and barges must be suited to the particular stream. What this is in each case must be determined by experiment and time; involving large out-

lay of capital, and large initial losses if by chance the type of boat or barge is not best suited for the purpose.

(c) There must be suitable terminals. Such terminals will be determined by the type of stream, the type of boats used, local conditions, the kind of freight to be handled, the best and cheapest means of handling it—all matters of slow growth involving expenditures of magnitude without immediate return.

(d) For economy of operation there should be balanced freight both ways; freight of low and high grade. The creation of a permanent and dependable transportation lane is a matter of time; and shippers will not use a lane until they are assured it is both dependable and permanent, even if it is cheaper. Under existing conditions of interchange and rates, the maintenance and operation of a line during this period of impressing the shipper with the idea it will be dependable and permanent involves an outlay of capital with such slight immediate prospect of return that the investor would certainly balk at such a hazardous venture.

(e) There must be interchange relations with the railroads. Port to port traffic alone would not sustain a common carrier of great public importance, nor would it be of any value except to those favorably situated upon the river. As all the people have been taxed to get the benefits of cheap water transportation it is necessary, (in order that those not located upon navigable streams should get such benefits), to have some means of getting their commodities to the terminals of the water transportation agency. This involves long negotiations with railroads all over the United States, and even when railroads are favorably inclined (which they generally are not), takes a long time; as each negotiation must be made separately. The returns on capital do not commence till these conditions are fulfilled, and, due to the uncertainty covering such negotiations, and to the commanding position of the railroads, the water carrier being at their mercy, this period of losses before negotiations are concluded may be so long drawn out as to be disastrous.

(f) There must be an equitable division of joint revenue earned by the rail and water carriers for a combined shipment.

All of these, it will be noted, involve obstacles that private capital avoids, and, if we are to reap any benefit from the vast sums of money being spent to make inland waterways navigable, some agency must create such conditions.

As I have said above, there were various handicaps to the restoration of water transportation in full vigor, by governmental operation, by any department of it, that delayed, restricted and hampered the accomplishment of the object sought, and *such handicaps were avoidable.* Any government official will immediately recognize this fact, and it needs no argument.

Based upon these views I submitted a proposition to the Secretary of War, as follows:

"Since there is a sincere disposition to develop common carriers on our inland and coastwise waterways, a widespread and well-founded belief in the necessity of such means of transportation, there must be a general recognition of what the experience of the Mississippi-Warrior service proves, and there should be presented to Congress a concrete program based on that demonstration, which they may either accept or reject. When this program is presented to them they should be informed fully in regard to the following points:

(a) The inherent difficulties of governmental operation.

(b) The necessity of governmental operation as a pioneer demonstrator.

(c) The necessity of Congress providing some means which will allow the Secretary of War, its mandatory, to do the things he would ordinarily do as the head of a great private transportation agency.

(d) The necessity of providing the Secretary of War with sufficient capital to overcome the conditions which militate against the success of the governmental demonstration.

In arguing the matter before the committee of the House and Senate the matter was presented in about this light:

(a) "You have half a billion dollars invested in canals and rivers, and you are appropriating forty or fifty million a year to increase navigation facilities on our inland waterways, in the hope that cheap transportation facilities will spring into existence. You have pursued this policy for fifty years, and you have less boats upon your rivers than ever before.

"'Either,' in the words of President Harding, 'this policy is a colossal mistake, or we have to devise some way by which the transportation facilities may be put back upon our rivers.'"

(b) "The Inland and Coastwise Waterways Service, through the Secretary of War, explains the problem to you and offers a concrete solution of it."

(c) "If you agree with the propositions submitted, give the Secretary of War the right and the power to operate a governmental transportation agency as he would operate a private agency, backed by sufficient capital, backed by an announced policy of Congress that it intends to restore water transportation, and let him work out the problem. If not, the country will pay ten billion dollars to the railroads in the next ten years, and get, at the end of ten years, precisely the same results it is now getting—unsatisfactory and insufficient transportation; and your half billion dollars already invested, and your fifty million annually appropriated, remain a monument of unavailing effort. Let this governmental agency use all its vast powers to coordinate rail and water transportation for the ultimate benefit of all concerned; and by such coordination furnish cheap and satisfactory transportation, with the saving of enormous amounts of money; or in spite of improved streams, your transportation facilities thereon will not increase."

The most serious and earnest consideration of these problems was given by Congress, and resulted in the enactment of Public Law 185, creating an Inland Waterways Corporation with a capital of $5,000,000 for the purpose of carrying on the operations of the government owned inland, canal, and coastwise waterways system to the point where the system can be transferred to private operation to the best advantage of the Government, and of carrying out the announced policy of Congress as follows:

"It is hereby declared to be the policy of Congress to promote, encourage and develop water transportation, and to foster and maintain in full vigor both rail and water transportation."

That corporation is now functioning, and the moot questions it is gradually deciding are these:

Is it possible for joint rail and water carriers, cooperating, to furnish cheaper transportation than all rail, with a division of earnings affording each a living revenue?

Does the inauguration of water transportation on rivers and canals offer sufficient inducement for private enterprise to undertake it?

The answer is no longer in doubt. We are confining our efforts to two typical streams, widely differing in all respects. On the lower Mississippi the conditions have been created, the questions are answered affirmatively. On the Warrior, the conditions are being created, and in a comparatively short time the questions will be answered affirmatively there, and private capital will invest freely.

With the stimulus of these successful operations, private capital will embark upon similar projects on other rivers, and in the lifetime of the present generation, I venture to predict such a revival of inland water-borne traffic as will astonish even the wildest enthusiast of today.

The conditions precedent to success may have to be created by the Government upon various other waterways, before private capital will embark, but, the funds derived from the sale of the Mississippi and Warrior lines will be more than sufficient to carry on the work without further Congressional appropriations.

One of the common objections that has been raised to this project for the re-establishment of transportation facilities on waterways by the Government has been formulated in about this manner—and usually as if it were unanswerable:

"Ah, I see! What you design to do is to let the Government bear all the losses, and as soon as you have developed a paying institution, you intend to turn it over to private interests."

Now, that is not a fact. Its application to the subject under consideration: that is, the rehabilitation of transportation facilities on inland waterways, is based on wrong premises, and ignorance of the exact but changing status of the facilities under consideration.

Those facilities which exist today, came into being as a war measure. They represented in round numbers, on July 1, 1921, thirteen million dollars invested at war-time prices. If these facilities had been disposed of on the basis of other similar equipment created for war-time purposes, a realization of 5 cents on the dollar would have been more than the average, and the Government could possibly have obtained $650,000 by a sale; the fleet would have been broken up, and waterway commerce on the Mississippi and Warrior Rivers destroyed.

During the succeeding fiscal years, including all appropriations made for 1922, 1923 and 1924 (fiscal year 1922 begins July 1, 1921, etc.), there was appropriated by Congress the total sum of $2,084,650; so that if we add this to the $650,000 which might have been realized by a post-war sale, the total peace investment of the Government in this project is $2,734,640.00.

Now let us see what that really represents today:

We have

(a) Repayable loans due from municipalities	$890,726.00
(b) Floating equipment, today's value	6,000,000.00
(c) Terminal facilities	1,484,000.00
	$8,374,726.00

In other words, reduced to mere figures, the Government has by holding on, enhanced the value of its investment $5,640,076.00. Therefore, the best interests of the Government can be conserved by carrying on the operations until they are so successful as to net 6 per cent return on the present-day valuation, and then disposing of the facilities as a going concern to private capital for a price based on a 6 per cent return on the investment, utilizing the money thus obtained in operations on other rivers to demonstrate that they, too, can be made profitable, and attractive to capital. In this way we expect to re-establish common carriers on every navigable stream.

Other Federal Agencies Having Jurisdiction Over Inland Waterways

The United States Shipping Board

T. V. O'Connor, Chairman

WITH regard to common carriers by water in interstate commerce the jurisdiction of the Shipping Board extends to such carriers when operating on the high seas or the Great Lakes. The Board does not have jurisdiction over inland water carriers per se, but if such inland water carrier participates in a through route or through rate arrangement with an interstate water carrier on the high seas or Great Lakes, the inland water carrier is subject to the Board with respect to such through routes or through rates.

Section 18 of the Shipping Act imposes upon interstate common carriers as defined in the Act, the obligation to establish, observe and enforce just and reasonable rates and provides that every such carrier shall file with the Board and keep open to public inspection in the form and manner and within the time prescribed by the Board the maximum rates, for or in connection with transportation between points on its own route and if a through route has been established the maximum rates, for or in connection with transportation between points on its own route and points on the route of any other carrier by water.

The Interstate Commerce Commission

Henry C. Hall, Chairman

THE Interstate Commerce Commission's jurisdiction under the Interstate Commerce Act extends "(1) To carriers by water when engaged in transportation handled partly by rail and partly by water when both are used under a common control, management, or arrangement for a continuous carriage or shipment;" and "(2) To carriers by water or vessels when such carriers or vessels are under the control of a railroad or other common carrier with which they compete or may compete."

This Commission has no jurisdiction over so-called "port-to-port" trffic where the water facility does not come under the provisions of the Panama Canal Act.

Bureau of Lighthouses, U. S. Department of Commerce

George R. Putnam, Commissioner

ALL the important navigable rivers and lakes of the United States are lighted by the Lighthouse Service, including the Great Lakes, the interior river systems, and important rivers along the coasts, and the inland coastal waterways. The first lights were established on the Mississippi River system near St. Louis in 1874. Very large traffic had developed on the Mississippi and tributaries before there were any lights established.

There are at present 1,920 lights and 935 buoys and beacons, marking approximately 4,200 miles of the Mississippi River and tributaries. The lights are of simple character, but are effective for the moderate distances that they are required to be seen, to indicate crossings and bends in the channels. These lights are usually shown from posts set on the river bank, with large wings so painted as to make a good daymark; occasionally a tree may furnish the lamp support. The river lights are cared for by persons living in the neighborhood, the work requiring but a part of their time and the compensation being a small amount per light per month.

There are three lighthouse districts for the maintenance of the lighting system on the Mississippi River and tributaries, with headquarters at St. Louis, Cincinnati, and Rock Island. There are three districts for the establishment and care of lights on the Great Lakes, with headquarters at Buffalo, Detroit, and Milwaukee. The important coastal rivers are maintained in connection with the coast lighting systems, as for instance, the Hudson River is included in the Third Lighthouse District with headquarters at New York, the Columbia River in the Seventeenth Lighthouse District with headquarters at Portland, Oregon, the Delaware River under the Superintendent of Lighthouses at Philadelphia, and the Mississippi River below New Orleans under the Superintendent at New Orleans. Each of the lighthouse districts has supply vessels known as lighthouse tenders.

Coast and Geodetic Survey, U. S. Department of Commerce

E. Lester Jones, Director

THE inland waterways along the Atlantic Coast constitute a highway for a large and constantly increasing volume of traffic; for fishermen and oystermen; for freight carriers, and for motor boatmen on pleasure bent.

Large sums of money have already been spent on deepening this route, providing through inland communication for special types of vessels that can economically transport large volumes of freight.

For the successful utilization by commerce of these waterways, adequate modern surveys are necessary. The Coast and Geodetic Survey of the Department of Commerce is charged with the charting of these waters and fully realizes the importance of up-to-date charts. It is making the necessary resurveys as rapidly as the appropriations will allow.

For the benefit of boats now using these waterways the Survey publishes a series of charts covering the route, and inside route pilots describing in detail the waters passed over.

Bureau of Navigation, U. S. Department of Commerce

D. B. Carson, Commissioner

THE laws administered by the Bureau of Navigation are general in their scope covering vessels on all the navigable waters of the United States. They do not have special reference to the inland rivers except in the Rules of the Road covering the navigation, passing signals and lights carried on vessels navigating such waters. It has been found necessary in earlier legislation to make some exceptions in regard to the ownership of vessels. These exceptions, however, are now more or less obsolete so that in all respects other than that noted above no distinction is made between vessels on the inland waters and those on the high seas and the Great Lakes. All vessels on these waters are engaged in the coasting trade and are exempt from laws which apply especially to trade with foreign countries.

Steamboat-Inspection Service, U. S. Department of Commerce

General George Uhler, Supervising Inspector General

THE Steamboat-Inspection Service has nothing to do directly with the development of inland waterways, but it does have considerable to do indirectly with such waterways. It has upon it the responsibility of inspecting and certificating steam vessels navigating upon such waterways, and also the inspection and certification of motor vessels of over fifteen gross tons carrying passengers or freight for hire on such waterways. Most of the vessels subject to inspection are required to carry licensed officers, and those licensed officers obtain their licenses upon due examination before the respective boards of local inspectors.

It may be interesting to point out also that, at the request of the Engineer Department of the War Department, this Service tests the steel of which boilers are constructed, approves the construction of boilers, and also examines the same, for vessels of the Engineer Department engaged in the development of inland waterways.

Bureau of Fisheries, U. S. Department of Commerce

Henry O'Malley, Commissioner

AT THE very beginning of our history our fisheries were of the greatest importance and have continued to hold high rank as a food supply and for training seamen for peace and war-time pursuits. The resolution approved February 9, 1871, providing for the appointment of a Commissioner of Fish and Fisheries represents the

Bureau of Fisheries, U. S. Department of Commerce—*continued*

beginning of one of the earliest and most effective conservation movements undertaken by our Government. The work of the Bureau of Fisheries of today divides itself along four major lines: (a) the accumulation of scientific and biological information which must form the basis for sane conservation laws and the proper development of our fishery resources; (b) the propagation of food fishes to supplement the natural supply and provide both food and recreation for our people; (c) effecting improvements in the methods of handling our annual harvest of two and one-half billion pounds to prevent waste and the taking of inventories of the fisheries for the guidance of the trade and the biologist; (d) the protection and development of the important fisheries of Alaska including the fur seals, sea ottors, sea lions and walruses.

Deforestation, pollution, reclamation and irrigation projects, power dams and the advances of civilization have seriously impaired our aquatic resources, especially those of our interior waterways. Good roads, mountain trails, and the increased use of the automobile have made accessible these waterways to increasing numbers of our people. The numbers of anglers, fish and game clubs, and outdoor recreationists have been tremendously augmented, adding to the heavy strain on those resources. As a result, the work of the Bureau in the fields of propagation and salvaging of food fishes and the collection of biological data upon which sane conservation laws must be based to be effective, has assumed an importance realized as never before. Its distribution of food and game fishes in 1924 approximated five and one-half billions.

Without administrative or executive control, except in the administration of the laws regulating Alaska fish and certain fur-bearing animals, and the sponge fisheries on the high seas off the coast of Florida, the Bureau, acting in an advisory capacity has been able to exert a powerful influence on the fisheries legislation of the states.

The Panama Canal

Colonel Jay J. Morrow, U. S. A., Governor of the Panama Canal

THE Panama Canal is built between latitudes 8° and 9° N. across the Isthmus of Panama at its narrowest part but one. The saddle through which it crosses the Continental Divide was originally about 335 feet above sea level. Gold Hill, the highest point immediately alongside the channel of the Canal rises 540 feet above sea level. The Canal has a length of 43.8 nautical miles from deep water in the Atlantic to deep water in the Pacific. The minimum depth of the channel is 41 feet.

The Panama Railroad extends between Colon and Panama on the eastern side of the Canal.

The Canal Zone is the strip of land extending five miles on either side of the axis of the Canal, but not including the cities of Panama and Colon, which remain within the Republic of Panama. It has an area of 441½ square miles including land and water. It was granted to the United States by the treaty made with Panama February 26, 1904. The United States paid $10,000,000 for the Zone, and make an annual payment in addition of $250,000. The Canal was opened to navigation on August 15, 1914.

The cost of construction of the Canal to the United States, exclusive of fortifications costing about $30,000,000, was approximately $373,000,000 to June 1, 1919. This includes the $40,000,000 paid for French rights and $10,000,000 paid to Panama, but not the yearly payments of $250,000 which began in 1913. Including the purchase of rights, payments to Panama, fortifications, and construction and operation of the Canal and its adjuncts in all their ramifications, the total appropriations by Congress to June 1, 1919, were $459,443,105.99. Receipts from tolls, from the opening of the Canal to June 1, 1919, amounted to $24,980,618.23. The administrative organization for the Canal is known as "The Panama Canal," with the Governor of The Panama Canal as head. The Governor reports to the President, who has delegated the Secretary of War to have supervision over the Canal for him. The present Governor is Col. Jay J. Morrow.

Federal Power Commission

An account of the authority of the Federal Government over water power was printed in the October, 1923, number of THE CONGRESSIONAL DIGEST. The development of Super-Power will be discussed fully in a future number.

The "Rivers and Harbors Bill" in the 68th Congress

THE Rivers and Harbors bill (H. R. 9672) was reported from the Committee on Rivers and Harbors by the chairman, Mr. S. Wallace Dempsey, N. Y., R., on June 4, 1924. Report No. 952. The bill was on the House Union Calendar when the first session of the 68th Congress adjourned on June 7, being No. 384. The bill adopts 34 new projects, authorizes the modification of seven others and authorizes three important investigations. The estimated cost of the new work provided for in the bill is $53,565,650, the three largest single items being $16,000,000 for a waterway from the Mississippi River to Corpus Christi, Texas; $11,200,000 for the Hudson River, N. Y.; $11,200,000 for the Los Angeles and Long Beach Harbors, Calif. After the bill is passed by the House it will go to the Senate where it will be referred to the Senate Committee on Commerce, of which Mr. Wesley L. Jones, Washington, R., is chairman.

The "Porter Bill" to Complete Unfinished Projects

ON JUNE 6, 1924, Mr. Stephen G. Porter, Penna., R., Chairman of the Committee on Foreign Affairs, introduced a bill (H. R. 9730) authorizing a bond issue in the sum of $204,000,000 to furnish funds necessary to pay the cost of completing authorized public works on rivers and harbors. The bill was referred to Committee on Ways and Means. In introducing this bill, Mr. Porter said: "This bill does not take the place of the rivers and harbors bill, it simply provides the means of financing projects which have already been adopted and most of which are partially completed. We have spent since the beginning of our history approximately $750,000,000 for river and harbor improvements. This does not include the Panama Canal or flood-control expenditures. A large part of this investment has been lying unused for years the Government bearing the expenses of maintenance and losing the interest on the unproductive investment."

Is Government Development of Inland Waterways Fair to Railways?

Pro

Joseph E. Ransdell
U. S. Senator, Louisiana, Democrat
President, National Merchant Marine Association

THE only hostile influence against improvement and use of internal water routes is the railroads. For years they have done their utmost to oppose large appropriations for improving rivers and canals, upon which they looked as upon actual or potential competitors. In many instances boat lines were driven out of business by establishment of cut-throat rail rates. Now railroads complain of hostile legislation, lack of support, loss of confidence, and general unfriendliness towards them. There is much ground for these complaints.

Something definite must be done to bring about better feeling and actual cooperation between the three great transportation agencies—road, rail and river. I earnestly appeal to the railroads to change their disastrous policy and become friends instead of foes to waterways.

In presenting the national necessity of bringing water carriage and rail carriage together in an organized sympathy, only one division of transportation need be considered, freight. In discussing problems of forwarding, I would here lay emphasis upon the fact that the seasonal blockades of traffic due to shortage of cars and motive power could be greatly lessened by using waterways, wherever feasible, to transport bulky freight of relatively low values per size and weight. This would serve to free rolling equipment for transport of compact, high-valued and frequently perishable goods.

Distribution and the cost of distribution are as vital to the population of the country as is production itself. It is of no advantage that a million bushels of grain has been grown on a piece of ground in Kansas, if that grain is to lie and rot upon the farms. It must be carried to market. Prosperity is not helped because a bumper production of this or that is brought into existence, if transportation means be lacking to move it promptly and at reasonable charge to those who require it.

Railroads have been in the United States the most marvelous developers of civilization and progress any country has ever known. Strange indeed it seems that they have not come to recognize the possibilities to themselves of inland-waterways friendship, when it is apparent that no considerable rail system exists or can exist here except by benefit of ports—of water terminals. I know of no better-paying railroads than those which feed to and are fed by the territories of Long Island Sound and the Great Lakes, where water-carrying of freight is so highly developed.

Yet it has been the policy of the railroads to discourage and seek to drive out water "competition."

At the close of 1920 we had in the United States 253,152 miles of railroads, and in that year they transported 1,740,849,000 tons of freight. For the same year the Government reported approximately 2,000 miles of inland waterways in actual operation, out of a total of 28,000 miles navigable and capable of being made navigable, and these 2,000 miles carried that year only 154,328,000 tons of freight. That this freight proportion by

Continued on page 395

Con

Robert S. Binkerd
Vice Chairman, Committee on Public Relations of the Eastern Railroads

IT is the earnest desire of the railroads to keep out of politics, and it is to the best interest of the country to keep politics out of railroads. If there is any lack in the completeness of this desirable separation today, it comes from those groups which are not content to have proper questions of regulation settled after fair examination of the merits, but who insist upon throwing these questions into the political arena.

Would it not tend to a little better understanding all the way around if we should bear in mind that, until very recent years, actual or potential water competition has been used by its proponents, not primarily as a means of augmenting the transportation facilities of the country, but as a means of getting superior rail transportation at a less than compensatory rate? As the proponents of water transportation become more reasonable in their proposals, they will not find lacking an equal spirit on the part of the railway managements of this country.

There is grave question as to the ability of many projects for water transportation to decrease actual transportation cost. The biggest artificial water transportation project in active operation in this country is the New York State Barge Canal. For hauling 100 pounds of freight from Buffalo to New York the barge canal rates are a few cents a hundred pounds less than the railroad rate for the same distance. But the barge canal rate is equivalent only to what in railroading we would call the transportation expense—namely, the mere out-of-pocket cost of moving a train over the rails. The shipper over the barge canal contributes nothing toward the compensation of the capital invested in the canal, nor the annual expenses of its maintenance.

The State of New York has an investment of over 228 million dollars in its barge canal. The annual cost of carrying this capital investment is not less than 11 million dollars. In addition, maintenance expenses on the canal run from 3 to 4 million dollars a year. When these charges are added to the actual charge for the boatmen's movement, it produced last year an actual cost of 4.2 cents for each ton-mile of canal transportation.

The average freight rate per ton-mile of the railroads which compete with the barge canal was only 1.1 cents. The whole cost of moving a ton of freight one mile through the Erie Canal was actually 282 per cent greater than the cost of the same movement over any one of five railroads serving the same points. In addition, the barge canal was a burden to the State and produced no income, while these railroads paid $20,413,000 in taxes.

These facts do not necessarily dispose of every other proposal for water transportation. Each such proposal must stand or fall on its own merits. But these facts certainly do create a strong presumption that progress does not lie along the line of creating state-subsidized means of transportation competing unfairly with railroad transportation.

Continued on page 395

Is Transportation Cheaper By Water Than By Rail?

Pro

S. A. Thompson
Secretary, National Rivers and Harbors Congress

MOST people do not realize the effect that transportation has upon them and upon all human affairs, because they do not themselves pay freight bills directly; but that does not mean they do not pay them absolutely.

Transportation affects the price of everything bought or sold by any individual. It limits the territory tributary to the trade of any city. It determines the development of the resources of any State. And far more than any other one thing it fixes the share obtained by any nation in the commerce of the world.

Unlike manufacture, which transforms crude materials into products adapted for human use, transportation changes the location of things without changing their character. The cost of transportation, therefore, is a tax, which must be paid either by the producer or the consumer, or, as is sometimes the case, divided between the two.

This transportation tax is by far the heaviest one we pay. Official figures for the year 1913 show that if to the total expenditures made by the National Government, for all purposes, we add all those made by the forty-eight States, by every county in all these States and by every city, town and incorporated village in the country with a population of 2,500 or over, the whole vast sum could have been paid out of the gross earnings and income of our railways for the same year, and there would then have been left a surplus of $152,000,000.

So, as you see, one form of transportation alone, the railway, collects from the average citizen of the United States more than he pays for the support of the nation, the state, the county and the city or village in which he lives. A little study of the cost of transportation by different methods may give us some light on the possibility of getting our transportation taxes reduced.

The experts of the Agricultural Department estimate the cost of transporting a ton of freight a distance of one mile by horse and wagon, on the average road in the United States, at 23 cents. In England, where the roads are much better than most of those in this country and where much attention has been given to the development of what the English call a steam lorry and we would call a steam truck, it is said that goods can be carried for five cents per ton per mile.

The average rate on all the railroads in the United States during the past few years has been about seven and a half mills per ton per mile, but I can pick out a special group of roads upon which the average has been about five mills.

On the Erie Canal in recent years the ton-mile rate has been about three mills, while on certain canals in Europe, which are deeper and wider and on which electric or other mechanical systems of haulage are used, the rate is two mills.

The official records kept at the "Soo" show that the average rate on the freight carried into and out of Lake Superior in 1913 was two-thirds of a mill per ton-mile, while coal is habitually carried from Buffalo to Duluth, and I have the authority of the Pittsburgh Coal Exchange

Continued on page 391

Con

Harold G. Moulton
Director, Institute of Economics, Washington, D. C.

IN EUROPE no less than in the United States, there occurred *pari passu* with the development of railways in the third quarter of the nineteenth century a rapid decline in the amount of traffic carried on inland water routes. This decline has continued to the present day in England and the United States, and it has been checked in the countries of continental Europe only by the extending of Government subsidies to the waterways. In order to prevent the almost complete diversion of traffic from the waterways it has been necessary for Governments to assume all, or nearly all, the fixed charges connected with water transportation, to pay for building, equipping, and maintaining the water routes, and to furnish them free of charge to the water carriers. When thus relieved of all save the mere direct cost of operating the boats, it is usually, though not always possible for the water carriers to offer rates which enable them to compete with railways, which are entirely self-supporting. Even then, it is not infrequently necessary to protect the waterways still further from railway competition by arbitrarily compelling the railways to quote rates from twenty to fifty per cent higher than those by water, as is the case in France and Belgium; and although the cost of transportation by water, when to the rate charged by the water carriers are added the taxes levied by the state in support of the waterways themselves, is usually much greater than that by rail, many people have still clung, strange as it may seem, to the belief that canal transportation is much cheaper than that by rail.

There can no longer be any question, however, that so far at least as *canals* are concerned, the cost of transportation, all factors included, is almost universally much greater by water than by rail. It is only in the case of very short canals which connect long stretches of naturally navigable waters that they can have any economic justification at the present time. While canals satisfactorily served the needs of an earlier period, their day, like that of the sickle, the hand-loom, and the spinning-jenny, is now forever past. Precisely as the canal supplanted the horse in the carriage of through freight, so in turn has the railway, in the course of industrial progress, come to take the place of the canal in the field of inland transportation. To attempt now to return to the antiquated system of transportation of a half-century ago, or to make canals an integral part of a national transportation system, whether for the carriage of high-class or low-grade freight, it matters not, is to attempt to turn backward the clock of time.

In the case of *rivers*, however, the situation may at times be somewhat different. But, after all, river transportation is usually analogous to that by canal, for comparatively few of our streams are really *natural* highways of commerce. As a rule they are navigable for the purposes of modern transportation, in name only, rather than in fact. So long as the cost of canalization of a river amounts to forty, sixty, or a hundred thousand dollars a mile, it belongs in the same category as a canal. A river like the Rhine, whose banks are firm, whose gradient is

Continued on page 391

Is Further Federal Expenditures on Waterways Sound Economics?

Pro

W. C. Culkins
Secretary, Ohio Valley Improvement Association

SURELY it is wisdom itself that would dictate the expenditure of additional appropriations on those projects which have been previously approved by Congress, and which, while in an uncompleted stage, are still as essential as when originally designed.

Numerous waterway improvement projects have been approved by Congressional action but must depend entirely upon annual appropriations by successive sessions to assure their ultimate completion; and the time of such completion is predicated almost exclusively upon adequacy and continuity of such appropriations. Few, if any, of these improvements produce a proportionate return on the amount invested until finished, and yet millions upon millions of dollars are tied up today in just this way.

For example, the Ohio River improvement situation presents a case in point. The first lock and dam was authorized by Congress in the year 1879. In the year 1910 the 60th Congress adopted the existing project of 54 locks and dams. Now, in the year 1924, 37 are completed and 11 under construction. $86,000,000 has been appropriated for this work. Perhaps $20,000,000 more will be needed to complete it. If the latter amount is appropriated during the next four years the entire Ohio project can be completed by 1929—exactly fifty years after the first dam was authorized.

What justification could there be for withholding the necessary funds with which to complete this gigantic project when $86,000,000 already invested cannot justify its investment without the $20,000,000 still needed?

This state of affairs is not peculiar to the Ohio River improvement but is typical of a number of other great waterway projects.

New waterway projects for which approval is sought and large appropriations necessary therefore, should be considered with due relation to all projects that are under way but which for the lack of money have not been completed.

The economic transportation requirements of our Nation will doubtless make new waterway projects imperative in future years, but the zeal to prosecute these should not be permitted to obscure our uncompleted schemes which are equally as vital to our national prosperity.

Production waits on transportation. We must bring up our transportation facilities to meet the ever-increasing demands of business. We must visualize the requirements of the future and meet those requirements by providing a great transportation system made up of the railways, the waterways, the highways and the airways, not contending but cooperating, and each profiting by confining operation within its own sphere.

If waterways are now an important factor, and destined to play an even greater part in our national transportation structure, then by whom shall they be developed?

Certainly not by municipalities or states, except where the benefits are strictly local. Nor would it be fair to say that this responsibility rests with only a group of states through which the waterways may flow. Private

Continued on page 391

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Bureau of Railway Economics*
Washington, D. C.

IN THE wide discussion regarding canals and inland waterways in this country during the past few years, little attention has been directed to the total cost of canal transportation.

A comparison of the cost of transportation by canal and by rail should include not only the immediate cost of conveyance, but also the cost of capital, of operation, and of maintenance.

Since 1882 the canals of the State of New York have been maintained and operated at the expense of the State for the free passage of boats, the only charges paid by the shipper by canal being those of the boatmen for conveyance. This does not mean that the fixed charges and cost of maintenance are obliterated, but that they are borne by the community as a whole instead of by the shipper. This raises the question whether the burdening of the entire community for the benefit of the shippers, who constitute only a portion of it, is justified. A fair comparison of the cost of transportation by canal and by rail should certainly be of aggregates that include every element in those respective costs.

Official data indicates that up to 1905 the cost of the Erie Canal was about $57,600,000, or $163,600 per mile.

If only four per cent be allowed for interest charges and extraordinary repairs and depreciation on the Erie Canal, and its total cost be taken at only $55,000,000, the annual fixed charge for these purposes is $2,200,000. This may be termed the aggregate cost of capital reduced to an annual basis.

As nearly as can be computed from ascertainable data the expense of maintaining the Erie Canal borne by the State of New York for the year 1909 was $672,105.

As nearly as can be computed from ascertainable data the average ton-mile charge made by the boatmen for conveyance of traffic over the Erie Canal is 2 mills.

A liberal estimate of the traffic on the Erie Canal for the year 1909 is 435,000,000 ton miles.

Apportionment of the aggregate annual cost of capital to this ton mileage gives 5.06 mills per ton mile. The cost of maintenance likewise apportioned gives 1.55 mills per ton mile. These items, added to the immediate charge for conveyance of 2 mills, make the total cost of transportation of freight on the Erie Canal 8.61 mills per ton mile.

For the same year of 1909 the average freight receipts were 6.2 mills per ton mile by the New York Central, 6.1 mills by the Erie, 7.4 mills by the Lackawanna, and 6.4 mills by the Lehigh Valley.

Whichever one of these various railway average receipts per ton mile be taken, the cost of transportation on the Erie Canal exceeds it by from sixteen to more than forty per cent.

These average rail receipts, moreover, include returns from high-grade merchandise such as is not carried in any quantity on the Erie Canal. The traffic of the Erie Canal is composed principally of grain, lumber, iron and iron ore,

Continued on page 391

*This is a private organization established by railways of the United States for the scientific study of transportation problems.

Will Waterway Development Solve Transportation Problem?

Hon. J. Hampton Moore

Former Mayor of Philadelphia
President, Atlantic Deeper Waterways Association

THERE are many excellent and convincing reasons why the Congress and the people should resume aggressively the development of waterways and ports in the United States. For one thing, the railroads are slowing up—at least in construction. The railroads are not building any new track and they are not buying equipment to the extent the increase of population would seem to require. They say they can't afford to go ahead. Why? Surely it is not the waterways that have stopped them. Tonnage on inland waterways is small compared with that of the railroads, and waterways have not had the Government assistance accorded to the railroads. Why are railroad managers complaining? The inference is that at present labor costs, with Government oversight and the competition of private concerns, such as trucks on public highways, fostered by Government, the railroads cannot be made to pay sufficiently to warrant further investment.

Like the railroads, the traction management has ceased to lay new tracks during the last few years. It has taken up about eight miles of track and laid not a new mile. It is even now reluctant to extend trackage and awaits subway construction at public expense to assure a further and adequate service to the people. Furthermore, it is avoiding the expense of tracks and trolleys by setting up motor buses upon the city-owned highways. A recognized spokesman for the railroads was quoted recently as saying: "The railroads are doing their best * * for higher efficiency, but are badly handicapped by the unfair competition of transportation facilities created wholly, or in part, by the Government, which pay no taxes and make no wage scales." So we get at the gist of it. It is not the waterway, the hitherto supposed competitor of the railroad, that has to do with the troubles of the railroad; it is automotive power utilizing Federal, State or municipally-built and owned highways.

Nor is it to be wondered at that the Federal Government itself was driven into the waterways transportation business during the war, and to a certain extent continues it now on the Mississippi and Warrior Rivers. With the railroads groaning under their existing burdens and the public-built highways crowded with motor carriers which rapidly acquire the status of a standardized transportation service, it would seem as if the actual constructive and productive agencies of the country must look to waterway development for relief.

We should not fail to note the continued progress of foreign nations in canal development. England, France, Germany, Italy and the Netherlands—all of them—are keeping up their canalization for the encouragement of transportation and the distribution of commodities. Some of their canals were indispensable during the war. Only recently the long-contemplated electrification of canals was introduced in England. If electrification continues upon the railroads, it is likely to be taken up by the canals of the United States, and sooner, possibly, than some of us contemplate.

Then open up the waterways! Take over the Cape Cod Canal and open a barge line by the Brockton route!

Continued on page 388

C. H. Markham

President of the Illinois Central Railroad

IF I say anything that seems to conflict with some of the theories of the advocates of the use of waterways for transportation purposes, I am not doing it for the purpose of throwing anything in the way of the proper development of the transportation systems of this country, whether they be by rail, by water, or by motor truck. But no matter how you may be able to extend the use of other agencies than the railroads in the last analysis you will find that adequate railroad transportation lies at the very foundation of our industrial and commercial supremacy. And all other agencies of transportation will be merely aids and adjuncts to the primary use of railroads for that purpose.

Some seem to be apprehensive as to the ability of the railroads to take care of the transportation requirements of expanding business. They need not be. There is no limit upon the amount of transportation the railroads can furnish—provided they are given proper treatment by the public. The recurrent transportation shortages of the last few years reveal no inherent limitation upon the capacity of the railroads; they reveal, rather, the fallacy of the destructive railway policies that have been followed. Restrictive regulation, especially of rates, has driven capital away from railway investments. The railroads have not been enabled to expand on a scale proportionate to the expansion of business because they have not been able to command all the new capital needed for the vast expenditures which adequate expansion requires. Given proper treatment by the public, the railroads can and will discharge their obligation to the country. If they are limited in their future growth, it will be solely because of a return to restrictive policies which cannot have other than a dangerous reaction upon agricultural, industrial and business enterprise throughout the country.

A great deal of agitation for the development of inland waterways has been based upon the plea that our railway facilities can never be expanded upon a scale large enough to serve adequately the transportation needs of the country, and that other means of transportation can be more readily, or more economically, developed to take their place. I believe water routes should be used for transportation purposes wherever it is demonstrated that their use is practicable and economical, but I do not think waterway development will solve the transportation problem. Water transportation was in use thousands of years before inventive genius harnessed the power of steam and electricity to the task of moving commerce. The necessity of maintaining adequate foreign commerce has kept the nations of the world wide awake in the development of transportation by water. However, in spite of its remarkable development, water transportation necessarily forms such a small portion of the domestic transportation of the country as to be infinitesimal when compared with rail transportation.

Take the Erie Canal as an example: In every respect it is a modern waterway, and it is toll-free. But as a transportation factor in its territory, it is the merest drop in the bucket. In 1921, when it carried the biggest traffic of any year since its enlargement, its tonnage was only about one-tenth of one per cent of the tonnage carried

Continued on page 388

Should Water Competition Be Considered a Justification for Relief from the Long-and-Short-Haul Clause?

The construction of the Panama Canal, a monumental enterprise most creditable to the genius of our engineers and the initiative of the American people, has evolved a great commerce, particularly between the Atlantic and Pacific Coasts. Out of that has arisen certain traffic problems—rates by rail from coast to coast; rates to interior points and between the interior points; and from the coast to interior points —and in all that section of the country which we commonly call the "Intermountain Section," the question of the long-and-short-haul clause [viz. Section 4 of the Interstate Commerce Act], and what they think is the extension of justice to them, is very much in the public mind. It is an acute question. It has got to be settled sometime, wisely and justly, both in the interests of the railroads and in the interests of water carriers, and in the interest, primarily, of the American public.—Hon. J. H. Small, President, National Rivers and Harbors Congress, Dec. 6, 1923.

Pro

S. J. Wettrick

Attorney, Transportation Department, Seattle Chamber of Commerce

I WISH to make it clear at the outset that I do not represent either the railroads or the steamships, and that I do not favor rail transportation as against water transportation, or vice versa.

In its ultimate effect, the question we are to discuss is whether the railroads of the country shall be permitted to engage in competition with the steamships. I shall not, however, as those who deny the proposition do, contend for a monopoly of traffic which would or should be competitive, but for equality of opportunity as between the two modes of transportation.

Seattle, as one of the Pacific Coast cities, located upon the water, is interested in the maintenance of a condition under which the railroads and the water carriers may compete freely with each other, and my purpose will be to show you that this is not only in the interest of the Pacific Coast cities, of the Atlantic and Gulf cities, but of the railroads, the intermountain territory, and of the people of the country as a whole.

The principle involved is as wide as the country and applies in connection with river transportation as it does in connection with the transcontinental lines making rates to compete with the intercoastal steamship lines.

Now what does relief from the long-and-short-haul clause mean? It means this: That clause prohibits the railroads from charging less for a long haul than for a short haul, but provides that, under certain circumstances and in special cases, the Interstate Commerce Commission may grant them authority to do so, and relief in connection with the question means that the railroads are permitted to make lower rates to the terminals to meet the competition of the water lines than the rates which they maintain at intermediate points. In order to do that they must get authority from the Commission, or in other words, get relief from the absolute provisions of the Fourth Section.

It is true that water transportation is the cheapest transportation that we have, at least that is used to any great extent for long-haul traffic. It is certainly cheaper than rail transportation, generally speaking, and if it were not for that fact we would not have this question before us.

Since water transportation is cheaper than rail transportation, the steamships operating through the Panama Canal fix the rates between the two coasts. They are on a basis which may be said to be considerably lower than what would be deemed normal rail rates between the two coasts. In order for the railroads to compete for

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Frank Lyon

Attorney, American-Hawaiian and Luckenbach Steamship Cos., on Behalf of the Intermediate Rate Association

THE coatwise traffic of this country has always been protected by laws which prohibit the engaging therein of foreign ships, but there never has been any law which forbade the railroads from depriving such ships of business by the railroads charging less at the water competitive points than they do to points in the interior where there is no competition. I advocate a line of policy that will lead to the enactment of a law which will not permit the railroads to deprive the steamships of business by charging less than reasonable rates at the ports of call of the ships. Under the present law, the Interstate Commerce Commission may authorize lower rates at the water competitive point. This authority should be withdrawn.

It is a question of governmental policy as to whether there shall be transportation by water. The Government might adopt a policy, or rather continue the present policy, of throwing all of its energies to the development of the railroad, leaving the ships to take only that business which the railroad does not want.

If the authority granted by the Commission to the railroads to charge less than reasonable rates to the water competitive points does not have the effect of either diverting to the railroads a portion of the business then being handled by the water lines or preventing new business from coming to the water lines, the action of the Commission is of no avail whatever to the railroad. The purpose of a departure from the rigid provision of Section 4, that the railroads shall not charge less for the longer distance, is to divert natural water-borne business to the railroads. This fourth section of the Act to Regulate Commerce has been amended two or three times, but the fundamental purpose has been written into all the amendments. Long before 1887, when the Act to Regulate Commerce was enacted, railroads were charging less at water competitive points, and that policy has continued down to the present time.

During the war, there was no transportation by water between the Atlantic and Pacific coasts and the railroads secured 100 per cent of the business. That was the ideal condition from the railroads' point of view. After the war, the steamships again reappeared in the coast-to-coast business. In the nature of things, they could not have reappeared had they not made rates lower than the reasonable rates that had been heretofore charged by the railroads. They could only secure business by reducing rates, as their service is less attractive. As soon as the steamships commenced to secure this transcontinental

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the traffic, therefore, they must make lower rates than might otherwise be regarded as reasonable.

If they are denied relief, they have the choice of two things. They may either keep their rates up at the terminals and lose the traffic to the steamship lines, or they may reduce the rates to the terminals and bring them down at intermediate points to the level rates established at the terminals. Either course would be very serious, if not ruinous, to the rail lines, because it would mean too large a loss of revenue.

The question then arises: Will anyone be injured if the railroads are permitted to make lower rates which will enable them to compete for the traffic between the two coasts so long as they can make a profit on that traffic over and above the additional cost of handling it? The intermediate communities claim that it is a discrimination against them for the terminal cities to be given lower rates than the rates which they enjoy, and that it should not be permitted.

The fact of the matter, however, is that we start with the premise that the steamship lines already have these lower rates from the Atlantic to the Pacific Coast and that the Pacific Coast shippers are able to get their freight at the low rates which the water carriers make, so that when the railroads are permitted to make competitive rates they are simply meeting a situation which already exists and which does not change the relationship between the Pacific Coast cities and the intermediate territory and therefore does not constitute discrimination.

Not only that, but it is actually a benefit to the intermediate territory if the railroads are permitted to make competitive rates—and when I say competitive rates, I don't mean, necessarily, the same rates as the steamships have, but rather equivalent rates. The railroads can ordinarily compete for traffic between the two coasts at rates that are from, say, ten to twenty-five cents per one hundred pounds higher than those of the steamship lines, due to their superiority in service and things of that kind. Now, if the railroads are permitted to engage in this traffic and make whatever profit they can on it, though it may not be as much as they normally should make, that will not injure the intermediate communities. On the contrary, it will be a benefit to them, because whatever the railroads can make on the terminal traffic will go that far to keep up the means of transportation upon which the intermediate communities must depend. If the railroads are not permitted to engage in the terminal traffic and make whatever profit they can on it, whatever they lose in that respect will have to be made up by charging the interior territory, where there is no water competition, enough more to make it up.

This question has been under discussion for years—ever since the transcontinental lines reached the Pacific Coast. It has been before the Interstate Commerce Commission for many years and that Commission has always sustained the principle, and has repeatedly said that it constitutes no discrimination against, or injury to, the intermediate territory.

Section 500 of the Transportation Act of 1920 declares it to be the policy of Congress "to foster and preserve in full vigor both rail and water transportation." I submit that you cannot foster and preserve in full vigor both rail and water transportation unless you permit the rail-

Continued on page 391

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business in such volume as to justify their continuance in the business, the railroads applied to the Interstate Commerce Commission for leave to depart from the rule of Section 4, by charging less between the coasts than to intermediate points. There were several of these applications before the Commission, some on westbound business and some on eastbound. The Commission granted some and denied others. The denial was not based upon the fact that, if granted, the business would be diverted from the water to the rail line.

The basis of these applications by the railroads was that the ships were taking business between the coasts which they had not heretofore handled, and that, in order to prevent this, it was necessary that the railroads should be authorized by the Commission to charge less for the haul between the coasts than to intermediate points. This means that less than reasonable rates would be charged by the railroads between the coasts while reasonable rates would be charged to the intermediate destinations. It is well recognized that the additional cost of handling additional business is less than the average cost of handling all business. In other words, with the railroads operating between the coasts, if business now carried by the ships could be transferred to the railroad, the additional cost of handling this new business would be relatively small. It was upon this theory that the case was presented to the Commission, and the railroads showed that they would not lose money by taking on the additional business at less than just and reasonable rates as that phrase is understood in the first section of the Interstate Commerce Law.

The Commission has heretofore recognized this as justifying an exception to Section 4, if other provisions of the law were not violated. These low rates could not be authorized if their application unduly prejudiced the interior.

The shipping industry cannot be built up successfully so long as the Interstate Commerce Commission is left discretion to allow departures from Section 4, which have for their purpose the limiting of business to be transported by water. To do away with uncertainty, the law should be either that the railroads may take all the business, or that the boat lines should be allowed to engage in the transportation without having hanging over them the continuing threat that at any moment this business will be taken from them, because of authority granted by the Commission to the railroads to charge less than reasonable rates at the water competitive points.

The issue is clearly drawn and is simple. There may be no denial of the fact that, if the water lines transport the business, the railroads will lose it. The converse is equally true. If the railroads transport it, the boat lines will lose it. The Interstate Commerce Commission should not have authority to allow the railroads to charge less than reasonable rates at water competitive points.

In these applications, the railroads in making them and the Commission in rendering its decision often speak of dividing the business between the water lines and the rail lines. In fact, that is what meeting competition means—that both means of transportation shall do part of the transporting. However, you can never get the railroads to say what proportion of the business they hope to take from the water lines. The reason for this is that they intend to get it all, if they can do so under rates that will

Continued on page 391

Two Views on Coordination of Rail and Water Routes

Hon. Cleveland A. Newton
U. S. Representative, Missouri, Republican Member, House Committee on Rivers and Harbors

WE HAVE expended $174,000,000 upon the rivers of the Mississippi Valley, and we can't successfully navigate them because we haven't expended $70,000,000 more to complete them. Those who believe that railroads should be our only vehicles of commerce contend that this is a large sum. Our opponents say that the rivers are improved at public expense while the railroads must make their own improvements. May I ask where does the Treasury of the United States get a dollar except that which is contributed by the people of this country, and where do the railroads get a dollar into their treasury except what is paid by the shippers and the people of the whole country? It is six of one and half a dozen of the other, and what the railroads ought to do, instead of carrying on this controversy, is to get down to business and live up to the provisions of the Esch-Cummins bill. If they would enjoy the blessings of the bill, they must bear its burdens with equal good faith. They must not undertake to claim protection under the revenue-yielding sections of the bill, and at the same time, ignore Section 500, which reads as follows:

> It is hereby declared to be the policy of Congress to promote, encourage and develop water transportation service and facilities in connection with the commerce of the United States and to foster and preserve in full vigor both rail and water transportation.

The railroads cannot claim to be living up to the provisions of Section 500 of the Esch-Cummins Act so long as they make cut-throat rates between water points and refuse to make a fair division of freight collected on a joint rail-and-water haul.

The people of this nation as a whole are not interested in waterways as such. They are not interested in highways as such. They are not interested in railways as such. The thing that the people of this country are interested in is a system of transportation capable of carrying the commerce at the cheapest price obtainable.

What are the facts about these rates? The rail rate from points in Kansas and Nebraska to Galveston are necessarily as low as the rail rates up and down the Mississippi River; so that the railroads between those points and Galveston today are putting on a potential water rate through dry territory in order to meet the rail lines that parallel the Missisippi River, and these rail lines make a rate to compete with and destroy, if they can, the water transportation on the Mississippi River, and the rail lines which go to Galveston are trying to assist them in accomplishing this purpose. In other words, the rail rate that parallels the Mississippi is about 55 to 60 per cent of the average rail rate of the country; the freight that goes through Galveston is getting the same rate; the Barge Line carries freight at 80 per cent of the rail rate that parallels the river to New Orleans, and the rail line that goes through dry territory to Galveston makes a competing rate.

A harbor is entitled to commerce when it and the rail lines to it can afford to make the best rate and, if it makes the best rate, it will get the commerce. Now what do we find? The bulk of the wheat that goes down the

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H. B. Cummins
Assistant Traffic Manager, Galveston Commercial Association, Galveston, Texas

I SHALL endeavor to explain Galveston's position in the matter of joint route and rate arrangements between railroads operating west of the Mississippi River and the Mississippi River Barge Line.

1st. We believe that there should be through joint routes and rates on traffic handled partly by rail and partly by water through natural gateways or interchange points. It does not necessarily follow, of course, that the Barge Line should be a participant in every through joint route in which a rail line parallelling the river is a participant, because many of these routes are extravagantly circuitous and are not the rate-making routes. If, however, it is found proper for these circuitous rail routes to meet the competition of the rate-making routes, the Barge Line should and does have the same privilege. But the route comprised in part by the Barge Line should not have the privilege nor the power to make *preferential rates* unless the *cost of the whole service* is lower than the cost obtaining via the rate-making route.

2nd. Preferential rates should be based on actual economies and *not* on natural disabilities such as slow, break-bulk and irregular services.

3d. Where areas of production or consumption or ports have been grouped or equalized as a result of legitimates carrier competition, such arrangements should not be disturbed by preferential rates via a given route except upon a positive showing that economies of operation justify such disturbances.

I will give an illustration of what traffic men call port equalization and explain what the plaintiff in the Barge Line Cases attempted to accomplish. Dallas, Texas, is an important origin of export cotton. Galveston, Texas, and New Orleans, La., are competitive seaports. Competing rail routes lead from Dallas to both Galveston and New Orleans. In round figures the distance to Galveston is 300 miles and to New Orleans 500 miles, and other transportation conditions are generally conceded to be similar. As a result of railroad and port competition the Galveston export rate is extended to New Orleans; thus, we have port parity or equality in the matter of export rates on cotton from Dallas, Texas. The rail route operating through north Louisiana and Vicksburg, Miss., participates in the equalized rate to New Orleans, notwithstanding the fact that the mileage through Vicksburg is somewhat greater than the direct mileage and the further fact that the mileage to Vicksburg proper is in excess of the direct mileage to Galveston, the so-called key port.

Undoubtedly the rate makers of the Barge Line were aware of this peculiar, yet common, system of rate construction. However, that did not deter them in their efforts to justify a preferential rate on cotton from Dallas to New Orleans via rail carriers to Vicksburg, thence by Barge Line. The differential that the Barge traffic men wanted to employ in making their rate was 8 cents per hundred weight or approximately 40 cents per bale less than the Galveston rate.

You can readily appreciate the predicament that Galveston would find herself in should we assent to such a

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Hon. Cleveland A. Newton—*continued*

Barge Line comes from Kansas, Nebraska, South Dakota, Western Iowa, and Western Missouri. The wheat that went down the Barge Line in the month of August amounted to 1,364,707 bushels. The 20 per cent differential on the shipment of that wheat between the barge rate and the rail rate which parallels the river, in the month of August alone, amounted to a saving to those shippers of $53,223. Now, if that is not economy in transportation, what is economy in transportation? If you can make a cheaper rate by rail down to Galveston, then ship to Galveston; but if you can get a joint rail and water rate down the Mississippi River from Kansas, Nebraska, Iowa, and the Dakotas which is cheaper than the rate through Galveston, then I am for the farmers of those States and believe they are entitled to benefit by that rate.

I am not interested in the port of New Orleans; I am not interested in the port of Galveston; or in the port of New York; but I am interested in seeing the shippers and the producers of this country get the benefit of the cheapest rates obtainable in carrying their products. The city of New Orleans has no claim on the Mississippi Valley; neither has the city of Galveston. If God, in creating this country, built a river to New Orleans and didn't build one to Galveston, then that is Galveston's misfortune. But no chamber of commerce has a right to go to the Congress of this country and say that we must make rates which will penalize the farmers of a particular section in order to force commerce to go through any particular port.

What are the facts? The Barge Line, last year, poorly equipped as it was, with the river channel incomplete, with sand bars cropping up here and there because the river from St. Louis to Cairo hasn't been improved, yet in the face of that, in all seasons when they had a reasonable channel where they could operate their poor equipment, even with their lack of necessary barges, they made a profit. During the first six months of last year, January to July, 1922, the Barge Line carried 375,463 tons of freight with a saving to the shippers of $305,016, resulting from the 20 per cent differential between the rail and water rate. Yet the Barge Line made a profit to the Government every month they operated when they had anything like a decent channel, and they will make a profit to the Government every month in the year if Congress will appropriate enough money to complete these channels.

The average rail rate of the country last year, according to the Interstate Commerce Commission, was 11.78 mills per ton-mile, and the rail lines contend that they should be allowed more. The Barge Line made a profit when they had a channel carrying freight at 3½ mills per ton-mile.

There is not any doubt but what if it were not for the Barge Line and the possibility of the Mississippi River's use, the rail rate that parallels the river would be the average rail rate of the country, and the rail rate the farmers pay from Kansas to Galveston today would be double what it is if it were not for the Mississippi; and yet the Chamber of Commerce of Galveston opposes joint rail and water rates which give to the farmers of Kansas, Nebraska, North and South Dakota, Western Missouri and Iowa, the benefits which the Mississippi River can afford, all because they want to force them to ship their

Continued on page 390

H. B. Cummins—*continued*

ridiculous scheme of rate making. Naturally we opposed it and shall continue to oppose it. Such a system of rate making runs counter to every *principle of economics.*

Summed up briefly, the Barge Line's proposal pertaining to rates was: That the differences between the rail rates along the river and the river rates should be deducted from the all-rail rates between all origins and destinations in constructing *preferential* joint rail-water rates. Through joint routes were proposed on all traffic in which a rail line parallelling the river participates.

Such a plan would make lower rates between the *whole west* and New Orleans than obtain between the west and Galveston, and in *innumerable* instances the distance by rail to the Mississippi River equals or exceeds the rail distance to Galveston. Therefore the Port of Galveston has a meritorious complaint against unjustifiable preferential rates on foreign commerce trans-shipped on the Mississippi River.

What reason is there for the Congress of these United States to spend, with its right hand, the people's money in developing and maintaining harbor projects on the Texas coast and at the same time, with its left hand, divert from the Texas ports, through more expensive channels of transportation to ports farther removed from the areas of production and consumption, the *tonnage needed to make the Texas ports going concerns?*

The ports of Texas should rise or fall—whichever sound economics may dictate—but certainly they should not be destroyed or hampered by an artificial and uneconomic rate adjustment such as that proposed by the Barge Line.

Perhaps some one will feel tempted to ask me why the railroads should be permitted to carry the Galveston rates to New Orleans from the Western Territory. The only way I can answer this question is that the producers, consumers and shippers of freight in this territory have clamored for such an adjustment and the competing rail carriers have acceded to their wishes. Waste should be eliminated and we believe it will be ultimately; but who is in possession of sufficient facts to warrant wholesale condemnation of a rate adjustment of many years' standing?

We are not opposed to any adjustment of rates and routes between rail and water carriers that is based on actual economies, but we shall oppose to the limit of our capacity every effort made to project the rivers into territories where navigable streams do not exist, through artificial and impracticable rate differentials designed to reward natural disabilities.

Central, Southern and Western Kansas, Colorado, Oklahoma and the Panhandle of Texas produce and export a considerable volume of grain, and the Texas ports have good and sufficient reason to expect at least an even break with other ports, New Orleans in particular, in transportation rates. We ask for nothing more nor less than a square deal and we are perfectly willing to have the Interstate Commerce Commission say what that is.

In my opinion the *inherent vice* of Barge Line proposals is the proposition to apply a fixed differential on all traffic passing over a given stretch of river, regardless of the length of the combined river and rail haul. Such a system of rate making would do violence to many shippers, localities, and competing routes and, if carried out to its logical conclusion, would make more enemies than friends for inland waterways.—*Extracts, see* 9 *p.* 395.

Is It Sound National Policy to Lower Rail Rates By Subsidized Waterways?

Pro

Dr. Julius Klein
Director, Bureau of Foreign and Domestic Commerce, U. S. Department of Commerce

THE usual conception of the industrialist is, of course, that foreign trade is a matter concerning primarily the seaboard States, that it has to do in some way with "Yankee ingenuity" and the ancient heritage of our ports and shipping interests, and that, as regards the interior of the country, the further back one goes the interest in oversea markets becomes less and less.

Nothing could be farther from the truth. The great productive areas in this country lie in the interior, and those areas are the ones that are concerned with our future as a foreign-trading nation. Considering merely manufactures, it is not generally realized that 40 per cent of those manufactures that we export are produced in an area west of Pittsburgh, north of the Arkansas-Tennessee line, and east of the Rocky Mountains. Then, of course, when we come to consider those great agricultural commodities that play so large a part in our foreign trade, we find practically all of them situated in that area—excluding only the largest single item, cotton. Ninety per cent of our exported foodstuffs come from the Middle West.

In other words, our foreign-trade future is linked up with the development of that inland area. The point to remember is that the foreign-trade interests of that region are steadily increasing—not simply the absolute quantity of merchandise exported, but also the percentage of the total shipments to foreign markets.

The agricultural communities of this country must awaken to the vital importance of foreign markets.

The primary consideration in connection with that problem, from our point of view, is, briefly, this: That agricultural commodities are in the main heavy, bulky, requiring low freight rates if they are to be marketed abroad at a profit. They cannot afford high freight charges, as can silk or fine machinery or many of the hand-made products of Europe. They *must* have low freights if they are to meet foreign competition in the markets across the seas. And this fact absolutely necessitates the provision of some form of inland water transportation.

The United States enjoys a number of advantages at this moment, as it faces this great era in its economic history, this coming struggle for the world's markets—because, of course, it *will* be a struggle and we may as well understand that now. In many lines we have an industrial technique that is equalled by none. A further advantage is that we fortunately still possess that old-time Yankee ingenuity, a capacity for creating new commodities, new devices to meet the needs of the world.

The great disadvantage that confronts us is the fact that our greatest productive areas are far from seaboard as compared with the situation among our rivals in Europe. Our inland exporters are therefore gasping away under a burden of heavy freights. We must help them, and the "pulmotor" (if I may use the expression) is low freight rates.

Continued on page 392

Con

Howard Elliott
Chairman, Northern Pacific Railway Company

RAILROADS are the basis of our national transportation system and first in importance to the country. Waterways and highways are very important and all three should be protected, developed, and co-ordinated.

Obviously if there were no railroads the commerce of the country would be confined to the seacoast, the Great Lakes, a limited number of navigable streams, and to the area that could be served by motor trucks. I believe in the development of the waterways and highways, but to subsidize them from the State and National treasuries and at the same time tax and restrict the railroads in their development does not seem to be a sound national policy.

As the primary form of transportation, the roads must be strengthened and helped and the transportation act was passed for that purpose. To use the governmental power and the taxes of the people to reduce the earnings of the railroads by furnishing waterways and highways without charge to the users increases the difficulty of making the transportation act a success.

On the one hand to say to the railroad that it must continue to serve the country without adequate rates and pay very heavy taxes, and on the other hand to say to the motor truck that roads will be provided free over which the motor truck shall operate without regulation and without maintenance of the highways, and that waterways shall be provided free on which ships may move without charge, seems illogical.

The entire transportation scheme should be treated alike by the Government, and the users of waterways and highways should contribute something for their use and maintenance.

Too rigid an observance of the long-and-short haul principle will deprive the transcontinental carriers of business which they can carry as extra business, and also it will work in the direction of concentrating business on the seacoast, and do harm to the manufacturing and industrial plants of the country between the Allegheny and the Rocky Mountains.

Ships can be employed anywhere. If they are not needed in coast-to-coast trade they can be used in foreign trade. But a railroad must stay where it is put, and must handle the business for which it is designed and built.

Sooner or later the inconsistency of the present policy will be recognized, objections will be made to the use of the taxes for the building and operation of ships through the Panama Canal and the remission of canal tolls on coast-to-coast traffic while the people, especially the producers in the Western States, will be forced to pay higher rates on their products to make up the loss.

I believe thoroughly in the development of every form of transportation, and if the railroads cannot survive in competition with newer forms, why they will have to go, but the development of these newer forms of transportation should not be at the expense of the general

Continued on page 392

Differing Views on Subsidized Inland Water Carriers

E. C. Plummer

Vice Chairman, U. S. Shipping Board

ONE of the few great industrial problems regarding which we can learn something valuable from Europe is inland water transportation. This fact has again been emphasized by observations made during the recent trip of the Special Committee of Congress* to European seaports.

Those numerous canals which literally form a net-work over the territory of Holland, Germany and France, play a part in the economic life of the people unlike any other form of transportation there. Not only do canals of larger size furnish highways for great barges towed by powerful tugs, but horse-drawn boats of less size are very numerous. The service is slow but it is so cheap and free from rail car delays, that it practically eliminates the transportation problem from calculations affecting the distribution of goods handled in this fashion.

These people have realized more fully than we the necessity of continuing their inland water transportation systems as supplemental to rail service. They have abundant rail facilities for the handling of all goods which require that form of transportation, but they also have the common sense to utilize their waterways for the cheap transportation of goods which do not require hurried delivery.

France, Holland and Germany were too wise to sacrifice their water highways to the influences of railroad transportation. England, like the United States, was at first carried away by the glamour of quick rail transportation; but she, like the United States, has come to realize the mistake that was made in sacrificing canal services as obsolete, and the report of the Royal Commission† appointed to study this subject of inland waterways is one of much value, for reduction in the cost of distributive transportation is now recognized by all economists as the most important problem facing the commercial world today. Every year writes its record on thousands upon thousands of tons of fruits, vegetables and other products of American fields and farms, left to rot on or in the ground, because they could not bear the freight charges, which their transportation to other parts of the country where they are so badly needed, imposed.

The Panama Canal has made possible such a reduction in transportation charges, that cargoes of fruits which formerly could not be marketed, are now brought by ships from California to Atlantic ports. Reduced freight burdens have literally created markets for these goods. Such always will be the effect of reducing the differential between what the producer receives and what the consumer pays. With further reductions in costs of transportation, such as will come from the Dieselizing of ships and greater economies in vessel operation, the transportation burdens which those products now carry, will be further reduced; and with the perfection of a more effective system of distribution, the products of each part of our country will

Continued on page 389

*Special Committee of the House to investigate the Shipping Board, Wallace H. White, Maine, R., Chairman. (68 Congress, 1 Session.)

†This Commission was appointed in 1906 and after three years of investigation, published its findings in 11 volumes. This work represents one of the most thorough studies of water transportation in Europe yet undertaken.

Julius Kruttschnitt

Chairman, Executive Committee of Board of Directors, Southern Pacific Co.

WE do not wish to be understood as criticizing or disapproving the motives of public policy that determined the construction of the Panama Canal, highways, inland waterways, and ships. We recognize the first as a measure of national defense; the last as indispensable to winning the war, whose cost, even if many times what it has been, would have been wisely incurred. The others are necessary for the development of our country and contribute largely to the pleasure and convenience of every one of us. But what we do criticize and protest most earnestly is the unrestricted use for common carrier purposes of these works, built with public money, to destroy the business of public service corporations built with private moneys dedicated to public use; and most of all do we protest against the entry by the United States Government, backed by the United States Treasury, into destructive competition with its own citizens.

Railroads are subject to the same inflexible economic laws to which all industries are subject. The first requisite for the prosperity of any property is the right to conduct its own affairs. Without this right efficient operation is impossible. [Among the] remedies easily applied and productive of great economies are:

Stop the use for common carrier purposes of highways, built with public moneys without adequate tolls and proper regulation. Vehicles of such size and weight as wreck not only the highways but the business of highly regulated and very highly taxed public service corporations, should be made to contribute tolls enough to pay interest on cost and maintenance of roads used in competition with public service corporations. The highways that the Federal Government and the States have built, and which are used by private individuals for common carrier purposes, rob the railroads of a tonnage vastly greater than the tonnage carried through the Panama Canal.

The conditions under which the highways are constructed and operated are grossly discriminative against the railroads and in favor of their competitors. As a rule the improved highway is located immediately adjacent to the right of way of the steam road, where it inflicts the maximum destructive effect on steam-road traffic.

In common justice these public carriers should be required to pay a tax on freight and passengers carried commensurate with the use of and injury to the roads they pass over.

It is not right to build these highways at high cost to the public generally, and then permit a limited number of people to put heavy vehicles on them, vehicles that destroy these highways more rapidly in one trip than a thousand private automobiles would do, and let them reap unlimited profit from that business.

Make inland waterways, built or improved at public expense, carry themselves as to interest on cost and maintenance by regulating the common carrier traffic on them and by imposing adequate tolls. A privately owned public service corporation cannot provide and maintain an expensive permanent way and compete successfully with agencies for which the public builds and maintains a per-

Continued on page 389

Discussion of Relative Value of Rail and Water to Shippers

Hon. J. Hampton Moore
Former Mayor of Philadelphia
President, Atlantic Deeper Waterways Association

I STOOD recently upon one of the wharves of Newark observing the merchandise as it came and went. Machinery, tools and heavy instruments—shells from Australia to be cut into buttons in Newark; cotton from Egypt as well as from the South, to be fabricated in the mills hereabouts, and every other conceivable product from garments to ships, made or in the making. It was, in a way, a revelation, so I turned to a leading shipper for enlightenment as to the relation of rail and water in the movement of this tremendous output. Questions and answers in succint form best suit our purpose in laying facts before you. They contribute to a better understanding of our advocacy of waterways primarily, and as a relief to the railroads.

Q. *Give a practical illustration of the advantage of waterway transportation to and from a point like Newark in the matter of time of delivery?*

A. Points via all water, such as Bridgeport, Providence, Boston, and Hudson River points and intermediate points on Long Island Sound, are reached from Newark in 24 hours. Corresponding railroad time would be from 3 to 5 days, provided schedule connections were made. Norfolk, Va., by water, 48 hours; railroad, 3 to 5 days. Savannah, Ga., by water 72 hours; railroad, 5 days.

Q. *What is the advantage of water transportation over rail in the matter of rates?*

A. To points enumerated above, particularly New England and Hudson River points, the water rates out of Newark are practically the same as all rail rates, but to southern and western points the Interstate Commerce Commission allows differential rates to rail and water lines operating from New York via the ports of Norfolk, Charleston, Savannah and Galveston. Illustration: St. St. Louis, all rail rate, $1.66—time, 7 days; rail and water rate, $1.56—time, 7 days. Chicago all rail rate, $1.42—time, 4 days; rail and water rate, $1.29—time, 7 days. You will note here a saving of 10 cents per hundred to St. Louis and points west of the Mississippi River, and a saving of 13 cents per hundred to Chicago and all points in the Central West taking a Chicago rate basis. In addition the shipper saves the expense of loading and storing in the cars, if it is a carload shipment. The time to St. Louis and points west of the Mississippi River is the same. To Chicago rate base points our time is from 2 to 3 days longer. Not only does the shipper save the expense of loading and storing in the cars, but he saves the expense of trucking to the railroad, if his plant is located on the waterfront.

Q. *How does this rate difference affect local shipments?*

A. Water rates between Newark and points on the Passaic River and New York Harbor direct to ship's side without transfer with an over-night service, is, on an average 7 cents per hundred, against an all rail service of from 24 to 48 hours, transfer in the harbor, and an average rate of 12 cents. Steam coal brought up the river here in barges averages 25 cents a ton less to consumers than when diverted via rail. And a much larger saving will be effected when the ship canal is opened.

Continued on page 388

Report of Joint Commission of Agricultural Inquiry

VAST expenditures upon improvements on lakes, rivers and canals have been made with but little reference to the existing and potential tonnage available.

Without doubt the improvements have proved valuable to the country, but they have not had a value commensurate to the expenditures. As a concrete example of this, the Mississippi River affords possibly the best illustration. In addition to the necessary expenditures on this waterway for flood control, vast sums have been spent in deepening and widening channels, removing snags and other obstructions to keep the stream open for commerce which has not materially developed.

In the past, attempt has been made to justify such expenditures because of their possible effect upon the rates of the rail carriers. A special report of the Board of U. S. Engineers (H. Doc. No. 50, 61st Cong., 1st sess.) contends that even if commerce were not developed on the waterway, the existence of such a waterway, ready for use would so affect railroad rates as to amply justify the expenditure for construction.

No expenditures by the National Government is justified for the construction or improvement of a useless or idle waterway for the sole purpose of reducing railway rates. There are more direct and less expensive methods of accomplishing this particular result, and it is manifest that a policy of this character places a burden in taxation upon the public as a whole, taxes citizens who are not directly or indirectly benefited by such reduction in freight rates, and creates a false rate structure for the benefit of a few communities to the detriment of many.

Unless railway rates as a whole are reduced to a practical basis of water transportation, the burden of rate reductions secured by water competition is merely shifted to traffic to or from localities which cannot use water transportation. This can be justified only by the actual economies of particular waterways and by permitting each section or community to have whatever advantages may be derived from their natural location.

Having in mind that the growth of our country has been largely due to efficient transportation methods, it would seem advisable that in the development of our waterways, funds for such development should be carefully expended and not solely with a view of a reduction of the rail rate, but rather with the idea of aiding in the general transportation scheme as creating self-sustaining means of transportation.

The Mississippi River Barge Line was inaugurated during the period of Federal control of rail and water lines and its local rates (e. i., the all-water rates) were generally made 80 per cent of the all-rail rates between the ports, and the differences so arrived at were applied as differentials to the all-rail rates in establishing the rail-and-water rates in connection with the barge line via the various gateways.

At the present time the rate on grain from St. Louis and East St. Louis to New Orleans for export via the Mississippi River Barge Line is 3.6 cents per hundred pounds less than the all-rail rate, this being equivalent to 2.16 cents per bushel of wheat.

There is very little wheat reaching New Orleans for

Continued on page 388

Government Ownership and Inland Waterways

Pro

Herbert Quick

Former Member, Federal Farm Loan Board

WE SPEAK of the "free navigation" of our waterways; but whether or not they are really free depends on the conditions governing their terminals.

Given a private monopoly of terminals, and water transport is as easily controlled for private profit as any.

Those who control the dock sites at which alone modern vessels can discharge and load, will see the opening offered to the control of the carrying trade itself, and will force combinations manipulated by themselves; and at last gather into their own hands the whole business of water-borne traffic, charging what the traffic can bear rather than what it should bear. These increased profits constantly become capitalized in the values of the favored sites, and the piling up of charges goes on. Given complete monopoly of the deep-water terminals of the world's ports, and the monopolization of water-borne trade follows, with the concomitant raising of freights to the mere living-point for boat-owners, or the consolidation of the ownership of all vessels in the hands of the dock-owners.

We are prone to speak of the building up of a great system of waterways complementary to our present system of railways as if all we have to do is to dig the ditches, and commerce must flow along them. Nothing could be more erroneous. Waterways without terminals would be as useless as electric wires without contacts.

The general rule can justly be deduced from the facts given, and no conclusion is drawn that private ownership of docks is incompatible with the development of an immense commerce. But the point is made that wherever a great commerce is accommodated at privately owned wharves, it is at the mercy of the owners of the terminals, that such a commerce is likely to be carried on in ships owned by or selected by the terminal-owners, that the development of port accommodations of the sort to which alone a general commerce will resort is likely to be arrested by the demands of private profit—in short, that private property cannot be expected to be administered for public purposes.

The importance of these principles to inland waterways is controlling and obvious. A voyage by river or canal is always taken for the purpose of touching land somewhere. The owners of river-frontage and canal frontage in cities and towns can control the commerce by water to and from such inland ports. Where they are owned by railways, the development of water-borne traffic is in their hands, and the improvement of the streams will either produce no commerce, or will result in the making of water feeders only for the railways by their own boat lines, and highways for low-grade freight for the railways' own convenience, on a free channel maintained at public expense.

However effective the great inland waterway of the Lakes has been in the past as a regulator of rates, its usefulness in that respect is now being diminished by monopoly of docks at the only places where commerce can be landed; and the Lakes themselves have become, through this cause alone in large measure, mere freight highways for railway use.

Railways have very naturally come to own or hold under lease much of the more valuable harbor frontage

Continued on page 390

Con

H. G. Anson

WHILE it is an acknowledged fact that modern terminals form the cornerstone of economical inland waterway transportaion, nevertheless, there are several other factors which bear equally important relationship to his problem and require the fullest consideration, if the development of inland waterway transportation is to escape numerous costly blunders and profit by competent council and the lessons of the past.

Ownership, uniform operation, adequate and scheduled service rendered and economical maintenance, are equally as important as the terminals themselves. Among the possible proprietors are the Federal Government, Munipal Government, and private enterprise.

Dealing first with Federal Government ownership, operation and maintenance.

Fundamentally, constituted government has a threefold purpose, "legislation," "administration" and "coercion." From the very definition of government it is manifest, "Ownership" is a foreign function. In the beginning, governments were established by "owners" to guard and protect their legitimate possession. "Owners" create government, foster and abide by it. Is it a logical practice, therefore, to permit the hired personnel of government changing every few years, created by "owners" and "possessor" for the protection of property and personal rights to absorb property rights and become owners? Government is abstract and impersonal. Commerce is concrete, material and personal and cannot be dealt with successfully in the abstract. Therefore, primarily the idea of government ownership and management is wrong.

The history of the failures of government management and operation of industrial and transportation institutions is written large and plain in the annals of time. Just so long as there is no individual reputation at stake, just so long as no individual money is squandered, just so long as no individual responsibility is fixed and determined, just so long as collective alibis are possible and politics can enter in, just so long as there is no individual incentive, there can be no efficient economical government ownership and operation of industrial or transportation enterprises (irrespective of its being fundamentally wrong.)

Dealing with municipal ownership and operation of inland waterway terminals, this agency and control presents no advantages, but on the other hand, represents all the political and economical disadvantages of Federal Government ownership, plus the inability to enjoy standardized physical equipment and terminal design. Different terminal handling charges, through and intermediate rates would be effected and indifferent service, delays and a general confusion and lost effort would result.

The cooperation of the Federal Government and private enterprise should be the best, easiest and quickest way to accomplish the desired end.

It is proposed that the Federal Government create a permanent board or association to regulate and control all activities of both railroad and water transportation, (foreign and domestic, ocean and river.) This board to fix and determine rates and charges, based, not upon pre-

Continued on page 390

The Great Lakes to the Gulf of Mexico Waterway Project

S. Con. Res. 2 (McCormick, Ill., R.) authorizing the appointment of a joint committee to investigate the problem of a nine-foot channel in the waterway from the Great Lakes to the Gulf of Mexico, etc., passed the Senate Dec. 19, 1923 and was awaiting action by the House Rules Committee when Congress adjourned June 7, 1924.

Pro

M. G. Barnes

Chief Engineer Division of Waterways,
Illinois State Department of Public Works and Buildings

YOU have heard a great deal about the Esch-Cummins Bill which guaranteed a definite income to railroads and a living wage to the laborers, but who has ever heard of similar acts to benefit the farmers? The Middle West is made up largely of farmers. One-third of the population of our country are farmers and more than one-half of the population of the Middle West are farmers, and it is this class of people who are appealing to us for better means of transportation.

In Nebraska it requires one bushel of grain to ship two bushels to market. In Iowa the freight bill on grain and live stock annually exceeds $30,000,000, and that bill is doubled every ten years. It is up to the people to do something to reduce this ever-increasing tax. Millions are being spent in the construction of highways to pull the farmer out of the mud, but what he now wants, what he now needs, is transportation from the railhead or from the waterhead to the ultimate consumer; and that, we believe, can be supplied over the waterways.

The Federal Government operates a barge line that is doing wonders in demonstrating the value and economy of barge transportation on the Mississippi, but finds that it can only reach the border of the great grain-producing region of the Middle West. The upper portions of the Mississippi, Illinois and Missouri Rivers are yet undeveloped. What we want is the completion of the projects that will permit the farmers of those great grain-producing countries to deliver their products to Chicago or to New Orleans, whence they can be sent to our own domestic consumers and to the foreigners.

The Middle West is vitally interested in and appreciates the potential advantages of the Great Lakes-to-the-Atlantic routes and the Mississippi from St. Louis to the Gulf.

The connection between Lake Michigan and the Mississippi stands out as the vital, missing link necessary to permit the full development of these two great inland waterway systems.

The State of Illinois is undertaking the development of the Illinois Waterway. The Mississippi River system, including the Illinois River, is now navigable up to Utica, Illinois, and the Great Lakes system navigation is extended to Lockport, 36 miles below Chicago, leaving a gap of only 65 miles of unnavigable waters, and it is this portion which the State has undertaken to make navigable. At the upper end is Lockport, the southern terminus of the Chicago Sanitary Canal,* which is now navigable with a depth of 20 feet and a bottom width of 160 feet. The water below is the Des Plaines River, a tributary of the Illinois River, and through a series of five locks the water is carried down to the Federal waterway at Utica. These

Continued on next page

*Diversion of water from Lake Michigan. Report on the Sanitary District of Chicago, with recommendations for action on the part of the War Department. Submitted by District Engineer, U. S. Engineer Office, Chicago, Ill., Nov. 1, 1923.

Con

John Howe Peyton

Member of American Society of Civil Engineers

THE proposed Lakes to the Gulf "Deep Waterway" seems impracticable, from a business point of view. In addition to the fact that the cost of constructing and maintaining such a waterway would be stupendous, and wholly out of proportion to the present or prospective traffic on the rivers, there are many physical difficulties and limitatons attending inland navigation that cannot be obviated and must, of necessity, always hamper and retard it.

Some of the natural laws, which are adverse to inland navigation are shown by their effects as follows:

The large rivers have, during all the ages, varied immensely in volume between periods of flood, when the waters spread out over the wide valleys, and periods of drought, when the waters subside within their banks, and frequently wholly cease to flow, or become mere rivulets, meandering among shoals and sand bars. The vertical variations of the Mississippi are close to fifty feet, throughout a great part of its length, and its width has often varied from a few hundred feet in drought periods to forty miles in great floods. The levees now usually prevent such wide lateral extensions, but the variations are still such that the river is many-fold wider at some periods than at others. These conditions make it impracticable to establish permanent depots or warehouses for storing goods, awaiting river transportation or received from the river, except in a few localities.

Again the banks of the Mississippi River are constantly caving and changing the position of the channel and the course of the stream. Some towns that were once on the bank of the river are now miles away from it, and some that once prospered on its banks have been wholly destroyed and washed away by its waters. The magnitude of these changes may be appreciated when it is known that the river has lost 242 miles of length by cutting off bends, within 200 years, and probably regained most of it by lengthening other bends.

During the spring and fall dense fogs are of frequent occurrence, which hang over the river throughout the night and far into the day. They make navigation so perilous that it is not attempted, and all boats stop and tie up to the bank until the fog rises. In the upper portions of the river, heavy snow storms have the same effect, but they are not so frequent as to be a serious menace to navigation.

North of Cairo the freezing of the Mississippi River frequently closes it to navigation from one to two months in a year. It has been so closed between Cairo and St. Louis, twenty-three times within the past forty-three years and navigation wholly suspended for weeks each time—sometimes two whole months in one year. When this ice

Continued on next page

Pro—continued

M. G. Barnes—*continued*

locks will be the same width as the locks of the Panama feet, the waterway as a whole will provide for barge fleet units of 9,000 tons of cargo. This tonnage represents about 12 trainloads as hauled by the Illinois Central, which parallels our project.

The navigation seasons on the Illinois Waterway will extend from April 1st, and in some years even from the middle of February, up to the 1st of December or later. of 9,000 tons of cargo. This tonnage represents about 12 The greatest supply of railroad cars occurs early in the season, reaching the maximum in May, and begins to rapidly decrease, and we find a car shortage after the farmers have reaped their harvest or thrashed or shelled their corn. The car supply reaches its minimum in October and November. Note that this car deficiency occurs during the navigable season. This shows that navigation on the Mississippi River system will supplement the railroads and aid them in moving the crops of the farmer at the time he wants them moved. As soon as Mr. Farmer gets off from his own farm and gets onto our highways he can deliver that grain to the waterways up to a distance of fifty miles at a less rate than a railroad can; and more than that, he can get it to a means of transportation that will serve him, instead of getting it to a railroad only to find that he must dump his grain on the ground, as is now actually being done in the West. While waiting patiently for cars, his grain is spoiling in the elements.

When we have completed the Illinois Waterway we shall have gone as far as the State can go in developing the missing link between the Great Lakes system and the Mississippi River system.

As an example of the way waterways have been provided in the past, I want to tell you what has taken place on the Mississippi and Illinois Rivers between Chicago and New Orleans. For the first 1,000 miles above New Orleans we have a depth of nine feet. For the reach from the mouth of the Ohio to the mouth of the Missouri, about 200 miles, we have a depth of eight feet. From the mouth of the Missouri to the mouth of the Illinois River, 60 miles, we have a depth of six feet—three different projects on the one river of this great reach. From the mouth of the Illinois to Utica, at the lower end of the Illinois Waterway, we have a depth of seven feet. Next comes the reach we have been discussing, 65 miles in length, with no navigation. Then we reach the Great Lakes system with a depth of 20 to 24 feet in some places. So we have seven different projects and different depths over the reach between the Great Lakes and the mouth of the Mississippi.

Now we want the Federal Government to standardize, so far as possible, this waterway. We are going to ask Congress to appropriate $2,700,000 to improve the lower Illinois and the Mississippi River from Utica to Cairo to a depth of nine feet, so that Mr. Bruce, from Milwaukee, can trade with Roy Miller, from Corpus Christi-on-the-Gulf.

Someone has said that it is impracticable to make nine feet in depth from the lower end of the Illinois River to the mouth of the Ohio, and that it would cost $650,000 a year to dredge and maintain the Mississippi River to a depth of nine feet, and also has asked why this great subsidy should be given to waterways? This question can

Continued on page 395

Con—continued

John Howe Peyton—*continued*

breaks up, in the spring, great damage to boats, barges and wharves often results on some of the rivers. The swift current causes the formation of immense bodies of ice, which dam up the river until the "head" becomes irresistible; then the "ice-gorge" gives way and a torrent of water, laden with huge bodies of ice, rushes down the valley, grinding and destroying the frail timber wharves, barges and boats.

On the upper Ohio River, which is in the same latitude as the Illinois River, the destruction wrought by breaking of "ice-gorges" is sometimes very great.

North of St. Louis the frequency and duration of periods of frozen waters increase rapidly, as the higher altitudes and latitudes are attained, and the volume of water rapidly diminishes. Streams in the latitude of the Chicago River and Drainage Canal and of the Illinois River are closed to navigation a part of every year, sometimes as much as three or four months in one winter. During such periods navigation must of necessity cease.

Wind storms are also frequent. During equinoctial periods they are sometimes terribly destructive to boats and barges, and always greatly endanger life and property on the river.

The Mississippi River and its tributaries carry an enormous quantity of "silt and soil matter," which is perpetually moving slowly towards the Gulf. This is chiefly from caving banks, which the United States' engineers tells us contribute 890,000,000 cubic yards every year to clog the river in the portion thereof between Cario and Donaldsonville. During periods of high water the banks are caving throughout the entire length of the Mississippi, from Cairo to New Orleans, on one side or the other, except for the short distances (an aggregate length of only 39.6 miles) within which the Government has protected the banks by revetment work, at enormous cost (close to $200,000 per mile). Vastly the greater part of this material is merely washed from one bank and carried down the river, a short distance, and deposited on the other side, where it may rest for a few years, or until some change in the regimen of the stream above alters the direction of the currents, resulting in its taking another short trip towards the Gulf. There is, however, an immense quantity of such material constantly rolling along the bottom of the river. Some authorities say that this moving mass, in the bottom of the channel, has an average depth of ten feet. It moves, or rests temporarily, according to stages of depth of water, or the direction and velocity of currents, all of which it is impossible to foresee or regulate. This silt is constantly forming "crossings" or sand-bars which obstruct navigation. Such bars will often form within a few hours, where there had been deep water, open to navigation, for weeks before.

If the towns and manufacturing plants located on the banks of the rivers find rail transportation preferable to that by water, what chance is there for water transportation of the products of the towns, factories, and farms, located a few miles away from the rivers, when they have railroad spurs extending to their doors? A bulletin of the Bureau of Commerce and Labor, on the subject of the "Cost of Getting Farm Products to Market," states that it has been ascertained that it costs the farmers of the country, on the average, more to haul their grain from the grain field to the railroad station than it does to pay the freight rate from the station to the market where it is sold.—*Extracts, see* 11 *p.* 395.

The Great Lakes-St. Lawrence Deep Waterway Project

The Great Lakes-St. Lawrence project was discussed *Pro* and *Con* in the September 1922 number of THE CONGRESSIONAL DIGEST. See also June, 1924 number, page 391, for present status.

Pro

A. H. Comstock

Chairman, Great Lakes-St. Lawrence Tidewater Commission of Minnesota

THE Minnesota Commission—officially designated as the Great Lakes-St. Lawrence Tidewater Commission of Minnesota—is charged with one duty only and authorized to speak for the State of Minnesota upon that improvement which will give ocean-going vessels access to the Great Lakes by way of the St. Lawrence and let lake vessels go down to the sea by the natural outlet.

The merits of the project are established by the case presented and proved before the International Joint Commission, whose findings of fact from the evidence are accepted by the administration and by every national body that has given attention to the matter. The case was well set forth in THE CONGRESSIONAL DIGEST for Sept., 1922.

The commerce of the Great Lakes, and of the ship channel between Montreal and the ocean, and of the proposed ship channel connecting the Great Lakes with the sea—all this is marine commerce. Not more desirable or less desirable than railway traffic, but different. Not more desirable or less desirable than inland waterway traffic, as generally conceived, but different. Anything we say about the influence of the Great Lakes-St. Lawrence ship channel may or may not apply to other waterways or other modes of transportation. There need be no confusion if we keep in mind the fact that the commerce of the Great Lakes and its connecting ship channels is marine commerce.

So we do not touch the point whether it is expedient to enter upon large Federal expenditures on waterway improvements; the Federal policy in that respect, like the Federal policy in respect to highway improvements, is not involved in this proposition. And as for spending Federal funds upon a productive investment, like the St. Lawrence improvement, once that fact is recognized that it is a productive investment, there is hardly room for debate upon the wisdom of the policy.

In the same way, the question of government operation is not involved in the project for a ship channel connecting the Great Lakes with the ocean. Whatever policy the Federal Government may adopt with reference to merchant marine in coastwise or foreign trade, that policy will apply without special enactment to the commerce of the Great Lakes through this channel, with foreign markets and with the other coasts of the United States. The ship channel will influence our merchant marine policy only in this way, that the national shipping policy will more immediately concern the Middle West when it participates directly in marine commerce—the people of the Middle West will be more apt to be "sea-minded."

We are, I may say of course, in full sympathy with the policy of cooperation on the part of the Federal Government, commercial organizations, and carriers, as outlined by the Transportation Conference of the Chamber of Commerce of the United States.

We are thinking of this ship channel as a fundamental economy in transportation and not as a club to beat down railroad rates. In fact, while it will lower the cost of transportation, it will beneficiate railroad rates. If, for example, the traffic will bear a rate of one dollar from

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Con

Hon. S. Wallace Dempsey

U. S. Representative, New York, Republican, Chairman, Committee on Rivers and Harbors

THE St. Lawrence route carried only four million tons of freight in 1923, and that was Canadian, not United States grain, and the most experienced men predicted that this river will never carry our grain. On account of the short season it is open, and the long period, each year when it is closed through ice, and because of the perils through fogs and tides, and of the resultant prohibitive insurance rates, the route will never be greatly used. Another feature which is even more greatly to its disadvantage is that on its thousand-mile course, it has only two centers of population, and runs the rest of the way through a territory with very few people, owing to which it would be impossible to secure return cargoes, while a route across the State of New York will furnish abundant cargoes for the return trip.

The improvement of the St. Lawrence route is advocated for the benefit of the wheat growers of the Northwest. Those being qualified to advise these wheat growers are urging them to diversify their crops and limit the production of wheat to the domestic demand on the ground that our farmers cannot compete with the cheap lands and lower labor cost in Canada, the Argentines and Australia. If this advice is followed as it should be, much wheat will be distributed over a waterway course across the State of New York and none of it would go through the St. Lawrence route.

The friends of the St. Lawrence route have advocated the payment for the waterway construction by the two countries in proportion to commerce, and that the Welland Canal, which is nearing completion, at a cost of one hundred million dollars, shall be considered a part of the work and Canada be reimbursed on the same basis. Our commerce on the Great Lakes, last year, was one hundred and twenty million tons, while that of Canada was less than seven million.

On the basis proposed, we would pay over sixteen dollars to Canada's one dollar. Moreover, we can construct a canal from La Salle to Lewiston, N. Y., only 7 miles in length, relieving vessels of three-fourths of the distance of constricted canal navigation and the expense will be, on the same basis per mile, only twenty-five millions, as against ninety-five millions, our proposed contribution to the Welland. Thus, we will save seventy millions of dollars, have a canal that is wholly our own, for use in peace and war, a canal only one-fourth of the length, and so four times as desirable from the navigation standpoint, and besides we will develop a large water power which will more than pay the cost of construction.

Moreover, our total contribution to the St. Lawrence waterway project is estimated at anywhere from five hundred millions to two billions of dollars, while it will cost but two hundred and fifty millions of dollars to complete all of the five hundred odd projects adopted by Congress for the improvements of all the harbors and rivers throughout our own country. It has been difficult (in spite of the fact that transportation is greatly congested and can be secured by rail only, at an exceedingly high cost and regardless of the fact that we can relieve con-

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Pro—continued

A. H. Comstock—*continued*

some interior point to the seaboard, the railroads may have better ton-mile earnings on the interior haul when the shipment enjoys low-cost water haul for the greater part of the distance. The use of waterways could beat down railroad rates only if they were too high, but if they are on the whole no higher than they need be, a reduction in one place may be recompensed only by an increase somewhere else, perhaps by a reduction of the transportation service in another place. On the other hand, economy in transportation, the employment of each arm of transportation to the best advantage, makes for a possible reduction of rates everywhere and enrichment of the service.

We do not wish to be understood as passing judgment on any other project. Other waterways may be more or less valuable; this ship channel is indispensable. We urge as an economic necessity that improvement which will admit ocean-going commerce to the Great Lakes by the improvement of the St. Lawrence ship channel, giving richer opportunity to all carriers and larger scope to all production and trade.

Hon. J. Hampton Moore—*continued from page 383*

Q. *When you use the Panama Canal, what is the difference in the matter of time and rates?*

A. We are making 17 days from Newark to San Francisco via Panama Canal against the railroad time of 14 days; while they show a better time, the time via water is more reliable. The rates, however, will not bear any comparison. Take a low class commodity such as paint, for instance. Paint from Newark in carload lots to San Francisco is $1.00 per hundred via Panama Canal. Via railroad, $2.50 per hundred. Linoleum, $1.25 per hundred via Panama Canal—via railroad, $2.75 per hundred.

Q. *What has been the effect of the Port Newark agitation for better channel facilities upon industry and business in this section?*

A. These differential rates and the Panama Canal rates have been an important factor in the building up of our manufacturing industries in this locality, as they enable the large manufacturers to establish industrial warehouses at various central points to which they are able to ship their products in large quantities, effecting a large saving in their movement to such distant points. Several large western manufacturers have transferred their Pacific Coast business from their central west factories to their factories on the Atlantic Seaboard because of the fact that they can ship cheaper through the Panama Canal and quicker to the Pacific Coast than they can from their plants located in the Central West.

Every port along the coast has its own story, but the story of the Port of Newark, with respect to rates and time of delivery, may be accepted as fairly representing the advantages which accrue to a community through practical port development.—*Extracts, see* 14 *p.* 395.

Hon. J. Hampton Moore—*continued from page 376*

Let us grow and expand! That is the song of the waterways man. If New York has long been dependent upon the railroad and the Ambrose Channel and finds itself clogged, open up the port facilities which radiate from it; utilize the stream approaches and the neighboring cities and ports will be stirred to greater activity. In every direction these neighboring cities are now awakening to lost opportunities in waterway utilities—or shall, we say,

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Hon. S. Wallace Dempsey—*continued*

gestion and obtain lower transportation rates by improving our waterways, and in no other way) to secure in these times of high taxation and necessary economy the funds necessary from year to year, to maintain and improve our own waterways. Are the people ready to expend at least twice as much as is needed for the completion of all of our own improvements on the deepening of one waterway in a foreign country?

Not alone are the people of this country opposed to the St. Lawrence route, as is evidenced by the recent action of the Republican convention at Cleveland, but they are enthusiastically in favor of the construction of a waterway across the State of New York, connecting the Great Lakes and the Atlantic. This is shown by the fact that the Committee on Rivers and Harbors recently reported unanimously a bill giving the Hudson a 27-foot depth to Albany, which will give a ship canal depth one-third of the distance between Buffalo and New York, and also for a survey by a Board of Engineers for a ship canal the remaining two-thirds of the distance.

The people of the valleys of the Mississippi, the Ohio and the Missouri have joined with the citizens of New York in the effort to improve the Hudson River and to construct an all-American waterway between Great Lakes and the Atlantic. Such a waterway has served the entire people in the West and East throughout our history, and it will serve them just as effectively and well in the future. It is most important to the general development of transportation in the country.—*Extracts, see* 16 *p.* 395.

Report of Joint Commission of Agricultural Inquiry

continued from page 383

local consumption or domestic reshipment. It is obvious that grain reaching the elevators at New Orleans by river must be sold abroad in the same lots with grain reaching the elevators by rail, and that there could be but one price to the foreign customer, whether the grain reached New Orleans by river or otherwise. The conclusion that the exporter of the grain is securing the benefit of the water movement is not possible of successful contradiction.

This should not be considered an indictment against river or inland transportation. It has its place. Its development, however, should be placed upon a sound, economic basis and should not be for the sole purpose of reducing the rail rates.

Inland waterways will be found most useful in the transportation of heavy commodities in bulk, and their value in this and other respects should not be underestimated. The development, however, should be based upon commercial value and utility, and with due regard for existing transportation systems.—*Extracts, see* 15 *p.* 395.

C. H. Markham—*continued from page 376*

by the Class I railroads of the country, while the amount which has been invested in the canal by the State of New York is equivalent to about 1.27 per cent of the tentative valuation placed upon the railroads for rate-making purposes by the Interstate Commerce Commission. Proportionately, therefore, in comparison with the railroads, its cost is more than ten times greater than its usefulness as a carrier, and that cost is borne by taxing the public.

The chief problem of transportation, in my opinion, is the problem of stabilizing railway credit so that the rail-

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to a lack of waterway preparedness? Examine the Upper Hudson situation! Albany and Troy, 150 miles from the sea, capable of great expansion. Is the channel there sufficient to do the business of which these Northern communities are capable? Open the New Jersey cross-cut and witness the effect upon Baltimore and the South. It is inevitable that these things shall come. When? That is the question. After we have spent our United States revenues in France, in England or in Canada? No. Let us prepare for our own future. Let us care for our own household. Let us not postpone it or delay it. Let us do it now! If we would see America first let us put America first.—*Extracts, see* 10 *p.* 395.

E. C. Plummer—*continued from page 382*

find a constantly increasing facility of access to all points of consumption.

Already the Government has established two important barge lines to facilitate the delivery of inland products to ocean ships in the Gulf, and the Shipping Board has assisted in providing tonnage that may utilize the Erie Canal and unite the ports of the Great Lakes with the ports of Newark and New York.

Now, just as the assurance of cheap and reliable distributive transportation is the most important element in our industrial problems at home today, cheap and reliable transportation is the most important element in the foreign commerce of this country today. At present, we have important foreign markets for the surplus products of this country. Their retention is absolutely essential to the continuance of our present prosperity. Both England and Germany are building the most economical types of modern ships to compete for those markets. If we were to allow them to do our carrying for us, then they would not only cripple our Merchant Marine but they would gain that further advantage of having the business secrets of Americans. And they would not give our people the service our American ships do.

To enable us to meet this competition for foreign markets on more nearly equal terms than at present prevails, the Shipping Board is preparing to transform a fleet of steamers now on hand into Diesel engine craft, which it will dispose of to private companies whenever ocean conditions shall become such as to make it possible for American capital to venture into them with a prospect of success. They should be but the advance squadron of a modern fleet of fast freighters and powerful passenger craft fitted to maintain our proper position on the sea.

Of course, there will be objectors to such an American program, just as there have been for half a century, but the World War was an "eye opener" in more than one sense and I see signs that our people are "getting on" to this game. For example: A recent forciful article in the Saturday Evening Post contains this language:

"Day by day, month in and month out, foreign statesmen and publicists and writers and lecturers have been instructing the American people in their duties until our ears and souls have wearied."

Some people I know wearied of this interference years ago. Continuing he says:

"If we are to forego our rights for fear of the risks incurred in offending the sensibilities of other peoples, the American democracy is finished."

He wasn't talking about ships there, but he was setting forth fundamental truths that our people can't appreciate any too soon.—*Extracts, see* 14 *p.* 395.

Con—continued

roads will be enabled to secure funds for the constant improvements in and extensions to their properties which are needed to keep pace with the growth of business. Furthermore, it is highly necessary that the managements of the railroads be freed from the embarrassment of unconstructive legislation and regulation and given an opportunity to exercise reasonable freedom in the management of their properties. The greatest need of the railroads, however, goes much deeper than these questions, and is, indeed, the foundation upon which they must be built. Their greatest need is a sound, constructive public opinion. —*Extracts, see* 8 *p.* 395.

Julius Kruttschnitt—*continued from page 382*

manent way free of cost. Large sums of money are being spent currently by the Government in improving and developing inland waterways, which in the aggregate will deprive the railroads of very heavy tonnage. Instances in point are the construction of dams and locks in the Warrior River, Ala., for the purpose of carrying coal from Alabama coal fields to seaports on the Mexican Gulf—tonnage which heretofore has been carried exclusively by the rail lines; and canals, on which the State of New York has spent $150,000,000 up to April, 1920, on traffic routes closely parallelling steam railroad lines.

For many years lower trans-continental rates were maintained at the Pacific ports than at interior intermediate points in order to retain a share of the coast traffic in competition with the sea. The withdrawal of all ships from the Panama Canal during the recent war resulted in the Interstate Commerce Commission discontinuing the relief from the long and short haul prohibition of the Interstate Commerce Act under which such rates were made.

The coast rates by railroad are too high to compete for a share of the commodities that are susceptible of transportation by vessel, and the railroads are suffering from their wholesale diversion. The inadequacy of their revenue must make it obvious to anyone that they cannot afford to reduce their rates at all intermediate points in order to make rates at the coast which will recover a portion of this traffic and check additional inroads thereon. Therefore they must either continue to submit to the loss of the coast tonnage and eventually obtain more revenue from their other rates, including those at the interior points, or obtain a renewal of authority from the Interstate Commerce Commission to make the necessary rates at the port without disturbing the prevailing rates at interior intermediate points, if they can earn enough on such traffic above the cost of handling it to contribute something to their revenue. Under efficient management, which is now required by law, it is evident that for every dollar by which a carrier's gross revenue is reduced by depriving it of the right to engage in competitive seaport traffic, although but slightly remunerative, an equal amount must be added to the burdens of traffic not so fortunately situated. The Interstate Commerce Commission should facilitate the efforts of the railroads to recover and retain a fair share of this traffic.

Reference is made to these matters to direct attention to factors, each of which exercises more or less influence in diverting tonnage which the steam carriers were instrumental in creating and on which they rely for the preservation of their corporate life. In the aggregate the amount is very large and is rapidly increasing.—*Extracts, see* 7 *p.* 395.

The Expansion of Our Inland Water Transportation—*Continued from page 365*

Operations on the New York State Barge Canal were placed under the New York Canal Section in April, 1918, and those on the Mississippi and Warrior Rivers under the Mississippi-Warrior Service in uly, 1918, with headquarters at New Orleans.

To secure more effective organization of activity than was possible under the Committee on Inland Waterways, whose function was largely advisory, a Division of Inland Waterways was substituted for the committee on September 5, 1918. The new division, responsible to the Director General of Railways, functioned until March 1, 1920, when, in accordance with the transportation act of 1920, its service was transferred to the jurisdiction of the Secretary of War. The Inland Waterways Service was combined at first with the port terminal branch of the Transportation Service, but upon the merger of the latter with the Quartermaster Corps it became a separate organization, called the Inland and Coastwise Waterways Service.

As a result of the opposition of the people of New York to Federal operation of a barge line on the New York State Barge Canal, a bill was introduced in Congress, which finally became law on February 17, 1921, providing for the immediate discontinuance of Federal operation of this service and for the sale of at least three-fourths of the equipment. The War Department was given unlimited time for the sale and was permitted to lease the equipment until such time as a satisfactory sale could be accomplished.

With the sale of this equipment, together with the transfer of the intracoastal branch (operating between New Bern, N. C., and Baltimore via Norfolk) to private operators, Federal participation in internal waterway transportation is now confined to the Mississippi Barge Line and the Mississippi-Warrior Line.—*Extracts.*

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Herbert Quick—*continued from page 384*

of the country. But railway control is no more inimical to the growth of water-borne commerce than other private ownership, where it amounts to a monopoly. In any private hands the site-value of the water-front will grow not only as fast as the commerce, but according to the law of anticipated increase will grow faster, and becoming capitalized into a body of values entitled to returns will become an incubus upon trade. Moreover, such ownership will make possible combinations among transportation lines; being, indeed, perhaps the only thing that can make such combinations possible, if alliances with railway lines be eliminated by law.

There is good reason to contend that the Federal Government should insist upon an adjustment of the matter of terminals all along every such waterway before spending the people's money upon it; for a waterway with monopolized banks at the ports is a gift to the owners of the water-front. The time to acquire rights for the public is before the highway is completed. To wait is, first to make a road for trade, and then pay for it over again to the owners of abutting land. The right of the railways to handle their terminal business to the destruction of waterway trade may well be considered; and, in a general way, the effects of terminals on water transportation should be worked out while there is yet time.

The controlling importance of the ownership of water terminals is manifest in practice and clear in reason; but the value of the factor of mechanical equipment—in which term is' included warehouses, docks, wharves, and the like—while not so apparent in its deeper implications, is a thing to which the American people must address themselves as they solve the terminal problem, if the waterways are to be accepted by commerce and win in the inevitable struggle of the new with the old.—*Extracts, see* 12 *p.* 395.

Hon. Cleveland A. Newton—*continued from page 380*

commodities through Galveston. We want economy of transportation. We want the facilities that will give us the cheapest rates through the Valley. If water lines can haul cheaper, then joint rail-and-water lines can haul cheaper than an all-rail line.

Galveston Harbor is entitled to every pound of freight that can go out of that harbor cheaper than by any other route, but the farmers of Kansas and other states should not be penalized in order to compel them to ship through Galveston.—*Extracts, see* 9 *p.* 395.

Con—*continued*

H. G. Anson—*continued from page 384*

cedent or theory or "reasonable" returns, but upon "cost of service rendered." "Cost of service rendered" to represent a definite given percentage return on property investment account, and a definite, given additional capital equity. This board should further have jurisdiction over standardization of equipment, standardized terminal design, operating methods, and the harmonious operation and cooperation of all classes of individual transportation enterprises and labor relations.

Upon the creation of this regulative tribunal, it is proposed that the Federal Government through the medium of this body, subsidize or lend financial aid to all forms of transportation enterprises coming under the jurisdiction of this board and who, by law, must abide by its rulings and regulations.

Federal Government and regulation and financial aid of this kind would mean universal standardization of physical equipment, standardized handling methods, standard transportation equipment, standard records, standardized inter-transfer of freight between rail, river and ocean, and all ways and means of doing a transportation business. This would result in efficienct, regular, scheduled, economical service. It would mean the revision of all freight handling charges, the elimination of discriminating community rates and put the whole rate question upon a "cost of service rendered basis," and a "cost of service rendered basis" would protect both capital, labor and the public and force private enterprise into a position where competent management and competitive effort would be a primary necessity of continued existence.

As it would be a primary duty of this tribunal to protect the large and small enterprise alike, a "cost of service rendered" base rate, being a given percentage return on the aggregate properties investment account of all operating companies, would allow the element of competitive efficiency to enter in, thus furnishing an incentive for individual company progress and development of the service.—*Extracts, see* 13 *p.* 395.

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W. C. Culkins—*continued from page 375*

control, another alternative, would create monopolies which would hardly be tolerable.

Waterway improvements, regardless of location, are beneficial in some degree to the entire country and this is equally true of many local projects as well.

Is it not, then, the charge of the Federal Government to develop and improve these waterways? To do this, further large appropriations will of necessity have to be made from federal funds, the ultimate extent of which can no more accurately be estimated than the potential transporting capacity of the waterways.

S. J. Wettrick—*continued from page 378*

roads to make rates on which they can compete on terms of equality with the steamship lines.

From the great general public standpoint, it seems to me—whether we are interested in river transportation, in the steamship lines, in the railroads, or whatever it may be—that we must take the view that the maximum of public benefit will be derived if the railroads are permitted freely to compete.

What is the situation at the present time? It is my understanding that the steamships have all the business they can handle, and we know that the same thing is true with the railroads. But it is also true that the transcontinental lines are hauling westbound a large preponderance of empty cars to bring back the products from the West to the East.

Would it not be much better if the railroads were permitted to make lower rates so they could attract a part of the traffic handled by the steamship lines and fill up their empty cars? That would induce a return of the cars to the West, where they are needed. It would mean better service, and that is the standpoint from which the great western territory, it seems to me, ought to be interested in this question.

The prosperity of the railroads is just as important to us as the prosperity of the steamship lines. We don't want to get along without either, and, unless the railroads are permitted to compete on terms of equality with the steamship lines, they will be seriously crippled. The great interior commerce of this country depends upon the railroads, which form a gridiron of steel over every part of it, and we should be fully as much interested in their prosperity as in that of the steamships, and realize that they should have the same opportunity to compete as other means of transportation have.—*Extracts, see* 8 *p.* 395.

S. A. Thompson—*continued from page 374*

for the statement that it has often been carried from Pittsburgh to New Orleans, for one-third of a mill per ton per mile.

Suppose you have a ton of freight to ship and a dollar to spend in shipping it. How far will the dollar carry the ton by these different methods and at these different rates of transportation?

By horse and wagon, a little over four miles; by English steam truck, 20 miles; by rail, at the average rate for

Continued on next page

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Bureau of Railway Economics—*continued from page 375*

stone, and coal. The receipts of the railways from such traffic are lower than their average receipts, and therefore the ratio of rail receipts to canal receipts on the kind of traffic that is carried by canal is lower than the above percentages indicate.

The railways, moreover, are in service all of the time, while the canal is idle an average of four and one-half months of each year.

It seems clear that the transportation of goods on the Erie Canal at the present time is a more expensive process, considered from the broadest point of view, than on the typical or average American railway, whether or not that railway be one that competes directly with the canal.—*Extracts, see* 3 *p.* 395.

Frank Lyon—*continued from page 378*

be allowed by the Commission. It is only a pretense on their part to say that they want only a portion of the business. If they are entitled to take one per cent of the water business they are entitled to take 99 per cent of it so long as they do not place a burden on other railroad traffic, and that is what they intend to do under their application. The history of railroading shows that that is what they have substantially done upon all the inland waterways of this country.

Compared with the twelve thousand million tons of freight originated by railroads each year in this country, the amount handled by the water lines is comparatively trifling. In the transcontinental cases, it appeared that in 1921 the total tonnage, both eastbound and westbound, through the Panama Canal from coast to coast was about 1,500,000 tons, and that the earnings were not over $15 a ton, making the gross revenue $22,500,000. The gross revenue of the rail carriers in 1921 was over six billions. The purpose of the Fourth Section applications was to transfer part of this $22,500,000 to the railroads. If they had secured all of it they would hardly have known that it had been received.—*Extracts, see* 8 *p.* 395.

Harold G. Moulton—*continued from page 374*

gentle, whose water supply is constant, and the cost of regulation of which is almost negligible, may, indeed, be regarded as a *natural* avenue of commerce; but a river such as the Mississippi, with ever caving sides and shifting bottoms, with periods of alternating floods and droughts, and the control of which is, in the opinion of engineers, a greater task than the building of the Panama Canal, is no more to be regarded as a *natural* highway of commerce than any artificial channel whatsoever. The test of the commercial success of such a river must lie in the cost of rendering it navigable for the purposes of modern transportation. Our investigations have indicated that it is only in rare instances that river transportation can be made as economical as transportation by rail. Canals like the Panama, Sault Ste Marie and Suez are, of course, in a very different category than long inland canals.—*Extracts, see* 4 *p.* 395.

Pro—*continued from page 391*

S. A. Thompson—*continued*

United States railways, 133 miles; at the rate on the group of selected railways, 200 miles; on the Erie Canal, 333 miles; on the European canals, 500 miles; by lake, at the average rate through the "Soo" Canal in 1913, 1,500 miles; while at the rate at which coal is carried both on the Great Lakes and on the Ohio and Mississippi Rivers, the ton of freight can be shipped 30 miles for a cent, 300 miles for a dime, 3,000 miles for a dollar.

If Noah had prophesied a drought, instead of a flood, and had issued bonds to construct an irrigation system, instead of building an Ark, he would have been a bright and shining example of business sagacity compared to a railway man who opposes the improvement of waterways. For, paradoxical as it may seem, the truth is that the best thing that can happen to a railway is to have a waterway paralleling every mile of its track. Indeed I have never been able to find an instance where the improvement of an existing waterway, or the creation of a new one, has done anything else than to increase the business and the dividends of competing railways.

It must be clear, therefore, that the cost of transportation absolutely limits and determines the distance from which raw materials can be drawn for manufacture, the distance to which the finished product can be shipped in competition with others in the same line of business; and that applies not only to firms and individuals, but to cities, States, and nations. And the nation, the city, the firm, or the individual that has the best, the cheapest, the most economical form of transportation available is the one that will win in the competition for trade anywhere on earth.—*Extracts, see* 5 *p.* 395.

Pro—*continued*

Dr. Julius Klein—*continued from page 381*

To ship a hundred pounds of steel even from Pittsburgh to the seaboard costs something like 28½ cents. The British steel manufacturer who is competing with the American in that line has to pay a maximum of 10 cents to transport an equivalent quantity from his factory to the seaboard—probably from the vicinity of Birmingham to Liverpool or to London. There is a whole series of disadvantages against the American; and when you come to consider the position with reference to our competition with continental Europe the problem is even more grave, because there you find, in many instances, national governments devoted to the task of bearing the burden, so far as possible, for the construction of traffic routes of all sorts, both rail and water, for the benefit of industry.

In our efforts to conquer foreign markets we should concern ourselves primarily with the fundamental question of the low cost of the product right here in the United States, landed at seaboard. Those are the real essentials —the ability to produce wealth cheaply, on the one hand, and, on the other, the facilities for laying down commodities on shipboard at the lowest possible rate.

Among such facilities now at the disposal of our inland producers and exporters are (1) the New York State Barge Canal, giving store-door delivery in Buffalo and through service from Duluth to New York City; (2) the Mississippi River Barge Line, tapping the manufacturing sections of the Middle West and offering export rates approximately 20 per cent under the all-rail rates; and (3) the Black Warrior River Line, which serves the coal and steel regions of Alabama and also offers export rates about 20 per cent under all-rail rates.

For those reasons it can be truly said that the gateway to our future success in foreign fields is not simply at seaboard but through a network of cheap water transportation facilities from the heart of the country, where the bulk of our export commodities are actually produced. —*Extracts, see* 6 *p.* 395.

Con—*continued*

Howard Elliott—*continued from page 381*

public, but be paid for by the shippers and users of the newer forms.

The gradual development of the law since 1887 has been in the direction of encouraging and protecting the buyer of transportation and safeguarding him from possible injustice, extortion, and unwise financing on the part of the producer of the transportation. Admitting for the sake of argument that this course was necessary, the time has come when the producer of the transportation must be protected and encouraged or he will be unable to furnish the transportation needed by the buyer at any price.

Better and more prompt results for the public could be obtained if railroad managements, familiar with all local conditions, studying constantly their business, and trying to expand it, should be allowed to make rates effective, subject to investigation and review by the Commission and to be set aside only after such review if found in any way contrary to public policy, and due reparation then made.

I believe the whole question of transportation by rail, water, motor truck, etc., is so important, so interwoven with the fabric of American life, that better results would be obtained if there were a secretary of transportation, who would be on an equality with the Postmaster General, the Secretary of Labor, the Secretary of Commerce, and the Secretary of Agriculture in discussing national questions in which transportation is so important.

The problem is to do justice to shippers, employees, and owners without unduly restricting the power of management to act promptly on important matters. This is the problem of Congress, and if the future indicates that changes are necessary in the law or in methods of administering it, I believe it will be well to consider these suggestions. But first give the transportation act a fair trial and back up the Interstate Commerce Commission and the Railroad Labor Board.—*Extracts, see* 7 *p.* 395.

Recent Government Publications of General Interest

The following publications issued by various departments of the Government may be obtained from the Superintendent of Documents, Government Printing Office, Washington, D. C.

Census

FOURTEENTH CENSUS OF THE UNITED STATES, State Compendium Illinois. *Price*, 40 cents.

Statistics of Populations, Occupation, Agriculture, Drainage, Manufactures, and Mines and Quarries for the State, Counties and Cities.

Customs Regulations

CUSTOMS REGULATIONS OF THE UNITED STATES, Prescribed for Instruction and Guidance of Customs Officers. Edition of 1923. *Price*, $1.50.

Regulations covering administration of tariff law, including duties of customs officers, collectors of customs, etc., with statistical matter.

Declaration of Independence

THE DECLARATION OF INDEPENDENCE. *Price*, 15 cents.

A photographic facsimile of the Declaration of Independence suitable for framing, size 34 x 29 inches.

Dyes and Coal-tar Chemicals

CENSUS OF DYES AND OTHER SYNTHETIC ORGANIC CHEMICALS, 1923. (Tariff Information Series No. 32.) *Price*, 25 cents.

Summary of census of dyes and other synthetic organic chemicals, 1923, production of dyes and coal-tar chemicals, 1923, international dye trade, with appendix and statistical tables.

Dressed Beef

MARKET CLASSES AND GRADES OF DRESSED BEEF; by W. C. Davis and C. V. Whalin. (Department Bulletin No. 1246.) *Price*, 30 cents.

Classifying and grading beef, complete classification of carcass beef and wholesale cuts.

Education

AN EVALUATION OF KINDERGARTEN-PRIMARY COURSES OF STUDY in Teacher-Training Institutions; by Nina C. Vandewalker. (Education Bureau, Bulletin No. 3, 1924.) *Price*, 5 cents.

Representative two, three and four year courses of study, teacher training, etc.

Explosives

PERMISSIBLE EXPLOSIVES, MINING EQUIPMENT, AND APPARATUS, Approved Prior to Jan. 1, 1924. *Price*, 5 cents.

Permissible explosives tested prior to January 1, 1924, permissible mining equipment, and approved mine-rescue breathing apparatus, etc.

Fermentation

MAKING VINEGAR IN THE HOME AND ON THE FARM; by Edwin LeFevre. (Farmers' Bulletin No. 1424.) *Price*, 5 cents.

Fermentation, after treatment, causes of failure, darkening of vinegar, with tests.

Financial Statistics

FINANCIAL STATISTICS OF STATES, 1922. *Price*, 10 cents.

Description of general tables, with diagrams.

Forestry

THE EUROPEAN ELM SCALE IN THE WEST; by Frank B. Herbert (Department of Agriculture Bulletin No. 1223.) *Price*, 10 cents.

History, distribution and spread, food plants, natural enemies, and control, etc.

Game Laws

GAME LAWS FOR SEASON 1924-25, a Summary of the Provisions of of Federal, State, and Provincial Statutes; by Geo. A. Lawyer, and others. (Farmers' Bulletin No. 1444.) *Price*, 5 cents.

Review of legislation of 1924, summary of laws relating to seasons, licenses, limits, possession, interstate transportation, and sale, imported game and game raised in captivity, etc.

Geographic Tables

GEOGRAPHIC TABLES AND FORMULAS; by Samuel S. Gannett. Fourth edition. (Geological Survey Bulletin No. 650, reprint.) *Price*, 25 cents.

Contains 39 working tables, with index and illustrations.

Government Salaries

GOVERNMENT SALARY TABLES. Price, 60 cents.

Showing basic salaries in accordance with provisions of Classification Act, approved March 4, 1923, two and one-half per cent deduction in accordance with Civil Service Retirement Act, approved May 22, 1920, as well as basic salaries less two and one-half per cent.

Immigration Laws

INFORMATION RELATIVE TO THE IMMIGRATION LAWS and their Enforcement in Connection with the Admission of Aliens. *Price*, 5 cents.

Persons subject to examination, excluded classes of aliens, illiteracy, immigration visés, permit to reenter the United States after temporary absence, appeals and reapplications.

Industrial Establishments

THE INTEGRATION OF INDUSTRIAL OPERATION; by Willard L. Thorp. (Census Monographs III.) *Price*, $1.00.

A statistical and descriptive analysis of development and growth of industrial establishments and of size, scope and structure of combinations of industrial establishments operated from central offices.

Insect Pests

DAMAGE BY TERMITES IN THE CANAL ZONE AND PANAMA and How to Prevent It; by Thomas E. Snyder, and others. (Department of Agriculture Bulletin No. 1232.) *Price*, 10 cents.

Geographical distribution, relative damage by families of termites, etc., with literature cited.

THE MEXICAN BEAN BEETLE IN THE EAST; by Neale F. Howard. (Farmers' Bulletin No. 1407.) *Price*, 5 cents.

Appearance of insect and nature of damage, history, food plants, control measures, with summary of control measures.

HORSE-FLIES, BIOLOGIES AND RELATION TO WESTERN AGRICULTURE; by J. L. Webb, and others. (Department Bulletin No. 1218.) *Price*, 10 cents.

Injuriousness and abundance, breeding methods and equipment, species involved, natural enemies of tabanids, protection of animals, repressive measures, with drainage and literature cited.

THE HOUSE FLY AND HOW TO SUPPRESS IT; by L. O. Howard and F. C. Bishop. (Farmers' Bulletin No. 1408.) *Price*, 5 cents.

Preventing breeding of flies, what communities can do to eliminate the house fly, etc.

Insecticides

TOBACCO HORNWORM INSECTICIDE. (Farmers' Bulletin No. 1356, reprint.) *Price*, 5 cents.

Use of powdered arsenate of lead in dark-tobacco district.

Interstate Commerce Commission Reports

INTERSTATE COMMERCE COMMISSION REPORTS, Decisions of U. S. Interstate Commerce Commission: Vol. 82, July-Dec., 1923. *Price* $2.00; Vol. 83, Aug.-Nov., 1923. *Price*, $2.00.

Cases reported, cases cited, opinions of the commission, etc., with index digest.

Irrigation

PUMPING FROM WELLS FOR IRRIGATION; by Paul A. Ewing. (Farmers' Bulletin No. 1404.) *Price*, 5 cents.

Quality and supply of water, the pumping lift, well casing, pumps, selection, installation, cost, and operation of pumps, etc.

Labor

ADMINISTRATION OF CHILD LABOR LAWS; Part 5, Standards Applicable to the Administration of Employment Certificate Systems; by Helen S. Woodbury. (Children's Bureau Publication No. 133.) *Price*, 25 cents.

Relation of legal standards to enforcement, requirements for obtaining certificates, etc., appendix and map.

FARM LABOR IN MASSACHUSETTS, 1921; by Josiah C. Folsom. (Department of Agriculture Bulletin No. 1220.) *Price*, 5 cents.

Methods of obtaining farm employees, education and occupational history of farm employees, wages and hours of labor, improvement of the farm labor situation, etc.

UNION SCALE OF WAGES AND HOURS OF LABOR, May 15, 1923. (Labor Bureau Bulletin No. 354.) *Price*, 20 cents.

Average hourly rates of wages and weekly hours in principal trades, scope of data, explanation of terms and methods, index numbers of union scale of wages and hours of labor, 1907 to 1923, etc.

WAGES AND HOURS OF LABOR IN THE AUTOMOBILE TIRE INDUSTRY, 1923. (Labor Bureau Bulletin No. 358.) *Price*, 10 cents.

Hours of operation, bonus system, rates for overtime, etc., occupations in the automobile tire industry and glossary of terms found in the automobile tire industry.

WAGES AND HOURS OF LABOR IN THE IRON AND STEEL INDUSTRY, 1907 to 1922. (Bureau of Labor Statistics Bulletin No. 353.) *Price*, 20 cents.

Blast furnaces, Bessemer converters, open-hearth furnaces, blooming mills, plate mills, etc., with general tables.

Leather

WEARING QUALITIES OF SHOE LEATHERS; by F. P. Veitch and others. (Department Bulletin No. 1168, reprint.) *Price*, 10 cents.

Livestock

DOURINE OF HORSES; by John R. Mohler. (Farmers' Bulletin No. 1146, reprint.) *Price*, 5 cents.

History of early outbreak, cause and transmission of the disease, diagnosis, treatment, with method of eradication.

EFFECT OF WINTER RATIONS ON PASTURE GAINS OF 2-YEAR-OLD STEERS; by E. W. Sheets and R. H. Tuckwiller. (Department of Agriculture Bulletin No. 1251.) *Price*, 10 cents.

Winter rations and their influence on pasture gains of 2-year-old steers, and cost.

VALUES OF VARIOUS NEW FEEDS FOR DAIRY COWS; by T. E. Woodward, and others. (Department of Agriculture Bulletin No. 1272.) *Price*, 5 cents

Fish meal compared with cottonseed meal, cane molasses as a supplementary feed.

Lumber

LUMBER, LATH AND SHINGLES. (Bureau of Census, Forest Products, 1922.) *Price*, 5 cents.

Continues annual series of lumber-production reports published by Bureau of Census or the Forest Service, beginning with 1904.

Marketing

CRANBERRY HARVESTING AND HANDLING; by Henry J. Franklin and others. (Farmers' Bulletin No. 1402.) *Price*, 5 cents.

Picking, handling, and packing in relation to marketing, harvesting, etc.

ORGANIZATION AND DEVELOPMENT OF A COOPERATIVE CITRUS-FRUIT MARKETING AGENCY; by A. W. McKay and others. (Department of Agriculture Bulletin No. 1237.) *Price*, 10 cents.

California citrus-industry, development of exchange system.

PREPARATION OF STRAWBERRIES FOR MARKET; by C. T. More. (Farmers' Bulletin No. 979, reprint.) *Price*, 5 cents.

Handling, labor problem, picking, grading, packing, shipping packages, loading cars, etc.

Medicine

THE MEDICAL DEPARTMENT OF THE U. S. ARMY IN THE WORLD WAR: Vol. XI, Surgery, Pt. 2. *Price*, $3.50.

Includes studies of Empyema, Maxillofacial Surgery, Ophthalmology, and Otolaryngology.

Mines, Mining

COAL-MINE FATALITIES IN THE UNITED STATES, 1923; by William W. Adams. (Mines Bureau Bulletin No. 241.) *Price*, 10 cents.

Causes of fatalities in 1923 by States and months, principal coal-mine disasters, index numbers of mine fatalities, State mine officials and compensation commission, with tables.

FLAME SAFETY LAMPS; by J. W. Paul and others. (Mines Bureau Bulletin No. 227.) *Price*, 50 cents.

Historical resume, evolution of flame safety lamp, design and construction, operation and maintenance, etc., with tables and illustrations.

National Defense Acts

NATIONAL DEFENSE ACTS, with Amendments, 1916-1923. *Price*, 10 cents.

Naturalization Laws

NATURALIZATION LAWS AND REGULATIONS, June 15, 1924. *Price*, 10 cents.

This edition supersedes all previous editions.

Patent, Trade-Mark and Copyright Case Decisions

DECISIONS OF THE COMMISSIONER OF PATENTS AND OF U. S. COURTS IN PATENT AND TRADE-MARK AND COPYRIGHT CASES, compiled from vols. 306-317, inclusive, of the Official Gazette of the United States Patent Office during the year 1923. *Price*, $1.25.

Photography

A CAMERA FOR STUDYING PROJECTILES IN FLIGHT; by H. L. Curtis, and others. (Standards Bureau Technologic Paper No. 225.) *Price*, 10 cents.

Poisonous Plants

THE WOLLY-POD MILKWEED (Asclepias Eriocarpa) as a Poisonous Plant; by C. Dwight Marsh, and others. (Department of Agriculture Bulletin No. 1212.) *Price*, 5 cents.

Description of plant, experimental work, etc.

THE MEADOW DEATH CAMAS (ZYGADENUS VENENOSUS) as a Poisonous Plant; by C. Dwight Marsh, and others. (Department of Agriculture Bulletin No. 1240.) *Price*, 5 cents.

Description and distribution of zygadenus venenosus experimental work, with summary and literature cited.

Postal Laws

POSTAL LAWS AND REGULATIONS OF UNITED STATES. Edition of 1924, in effect July 1, 1924. *Price*, $1.00.

Post Office Department and Postal Service, estimates, appropriations, disbursements, and accounts, mail matter, delivery service, registry system, money-order system, etc.

Rabbit Raising

RABBIT RAISING; by Ned Dearborn. (Farmers' Bulletin No. 1090, reprint.) *Price*, 5 cents.

Utility rabbits, costs, hutches and yards, feeding, breeding, selling, dressing, cooking, skins, diseases, etc.

Railway Statistics

TEXT OF THIRTY-SIXTH ANNUAL REPORT ON STATISTICS OF RAILWAYS IN UNITED STATES, for Year Ended Dec. 31, 1922. *Price*, 20 cents.

Includes statistics based on monthly and quarterly reports of railways for 1923, and selected data relating to other common carriers subject to the Interstate Commerce Act for the years 1922 and 1923.

Sewerage

SEWAGE AND SEWERAGE OF FARM HOMES; by George M. Warren. (Farmers' Bulletin No. 1227, reprint.) *Price*, 5 cents.

Nature and quantity of sewage decomposition, importance of air in treatment of sewage, practical utilities, septic tanks, etc.

Soil

THE CAPILLARY DISTRIBUTION OF MOISTURE IN SOIL COLUMNS OF SMALL CROSS SECTION; by W. W. McLaughlin. (Department Bulletin No. 1221) *Price*, 5 cents.

Results of experiments, Idaho sandy soil, Santa Clara and Cache Valley soils, with summary.

SOIL SURVEY OF MUHLENBERG COUNTY, KENTUCKY; by J. A. Kerr and others. *Price*, 25 cents.

Description of area, climate, agriculture, soils, with summary and map.

SOIL SURVEY OF HOWARD COUNTY, NEBRASKA; by F. A. Hayes and others. *Price*, 25 cents.

Description of area, climate, agriculture, and soils, etc., with illustrations and map.

SOIL SURVEY OF ADAMS COUNTY, WISCONSIN; by W. J. Geib and others. *Price*, 25 cents.

SOIL SURVEY OF DALLAS COUNTY, TEXAS; by William T. Carter and others. *Price*, 15 cents.

SOIL SURVEY OF GREENVILLE COUNTY, SOUTH CAROLINA; by W. I. Watkins and others. *Price*, 15 cents.

SOIL SURVEY OF TARRANT COUNTY, TEXAS; by H. W. Hawker. *Price*, 25 cents.

SOIL SURVEY OF THE WINSLOW AREA, ARIZONA; by A. T. Strahorn and others. *Price*, 15 cents.

Standardization

SIMPLIFIED PRACTICE RECOMMENDATION, No. 6: Files and Rasps (Bureau of Standards) *Price*, 5 cents.

STANDARDIZATION OF HOSIERY BOX DIMENSIONS; by Charles W. Schoffstall and E. M. Schenke. (Standards Bureau Technologic Paper No. 253) *Price*, 10 cents.

General survey, new method of folding men's hosiery, results obtained from standard hosiery boxes, etc.

UNITED STATES GOVERNMENT MASTER SPECIFICATION for Coal-Tar Pitch for Waterproofing and Damp Proofing. (Standards Bureau Circular No. 155, Specification No. 83) *Price*, 5 cents.

Sampling and laboratory examination.

UNITED STATES GOVERNMENT SPECIFICATION FOR LUBRICANTS AND LIQUID FUELS, AND METHODS FOR TESTING. (Mines Technical Paper No. 323 A, Federal Specifications Board, Standards Specification No. 2c) *Price*, 15 cents.

UNITED STATES GOVERNMENT MASTER SPECIFICATIONS FOR ASPHALT FOR MINERAL-SURFACED ROOFING. (Standards Bureau Circular No. 159.) *Price*, 5 cents.

Sampling, and laboratory examination.

UNITED STATES GOVERNMENT MASTER SPECIFICATIONS FOR ASPHALT FOR WATERPROOFING AND DAMP ROOFING. (Bureau of Standards Circular No. 160.) *Price*, 5 cents.

UNITED STATES GRADES FOR TIMOTHY HAY, CLOVER HAY, CLOVER MIXED HAY, AND GRASS MIXED HAY, Effective February 1, 1924, Including an Outline of Hay Making, Baling, and Loading Methods Essential to the Marketing of High Grade Hay; by Edward C. Parker. (Department Circular No. 326.)

Early work on hay standardization, explanation of United States grades for timothy and clover hay, haymaking, baling, and loading methods essential to the marketing of high-grade hay, etc.

Pro—*continued*

Hon. Joseph E. Ransdell—*continued from page 371*

water—less than 9 per cent of the rail total—should be so small, was a red signal that ought to have flagged the railroad mind. Boats do not take departing goods that have not been first deposited, mainly by railroads, upon docks. They do not deposit arriving freight to be consumed upon docks, but to be picked up and taken, mainly by railroads, away from docks for distribution. Why should such natural partners as boats and trains be enemies?

The people pay the taxes out of which Government improves inland waterways for operation. It is the same people who buy and own the securities (stocks and bonds) of the railroads, and who depend upon railroads' earnings for income upon the investment. Yet the railroads hold down those earnings by warring against instead of working with the waterways which the people's taxes maintain.

Common carriers by water must, in the interests of both the public and themselves, be co-ordinated to the fullest extent possible with the railroads, so that joint water-rail rates may be used with the same freedom by the people as by the railroads. It is possible this condition will have to be forced upon the railroads. If so, no hesitancy should intervene, for it is the commerce of the country that must be served.

Transportation by waterways is the cheapest form known. They are the natural regulators of commerce, and they should, as far as they can, be utilized for the common good. They must be freed of all forms of suppressive restrictions.

It would appear to be peculiarly the duty of the Interstate Commerce Commission to correct conditions under which it has been and still is possible for railroads to stifle water operation anywhere. If machinery for inquiry or assistance is needed, Congress ought to set it up and start the wheels.—*Extracts, see 1 p. 395.*

Pro—*continued*

M. G. Barnes—*continued from page 386*

be answered by reference to Government statistics. This year the Federal Government has transported something over 800,000 tons of freight between New Orleans and St. Louis at a saving to the shippers of over $1.35 per ton and in some instances much in excess of that. If the Federal Government could send its barges to Chicago it would surely send more trade to Chicago than it is sending to St. Louis. If it sent the same amount to Chicago that it is sending to St. Louis the subsidy, or the cost of keeping the Mississippi River open, would amount to less than 75 cents per ton on the tonnage that can be transported on that inadequate and insufficient fleet. The saving to shippers is $1.35 per ton, so that, from that fleet alone, the saving to the country at large would still be 60 cents per ton; showing that, even with the fleet capacity now in the river, we could stand this cost of $4,000,000 to dredge the Mississippi River so that we can realize on the expenditure which the State is undertaking in order to give real transportation on modern-size boats from the Gulf to the Great Lakes.—*Extracts, see 6, 12 p. 395.*

Con—*continued*

Robert S. Binkerd—*continued from page 373*

The American railroad industry has shown remarkable efficiency in increasing the volume of transportation without equal increases in investment or operating expense. As a general rule, therefore, the public interest will be best served by giving to the railroads—rather than frittering away from them—all the traffic which lies within their economic field.—*Extracts, see 2 p. 395.*

Sources From Which Material in This Number Is Taken

Articles for which no source is given have been specially prepared for this number of THE CONGRESSIONAL DIGEST.

1—Extracts from article in Manufacturers Record, June 21, 1923.

2—Extracts from letter by Robert S. Binkerd to Editor of the St. Louis Post-Dispatch, reprinted in Railroad Data, Aug. 15, 1924.

3—Extracts from Report on "The Cost of Transportation on the Erie Canal and by Rail," by the Bureau of Railway Economics, reprint, 1907.

4—Extracts from "Waterways vs. Railways," by Harold G. Moulton, (Hart, Schaffner and Marx Prize Essay, 1914).

5—Extracts from address before Third National Foreign Trade Convention, New Orleans, Jan. 29, 1916.

6—Extracts from Address before National Rivers and Harbors Congress, Washington, D. C., March 2, 1922.

7—Extracts from Hearings before the Committee on Interstate Commerce, U. S. Senate, 67th Congress, 1st session, on S. Res. 73, May, June, 1921.

8—Extracts from speech before National Rivers and Harbors Congress, Washington, D. C., Dec. 7, 1922.

See also Hearings relative to Long and Short Haul charges, held February, 1924, before U. S. Senate Committee on Interstate Commerce, on S. 2147, a bill to amend section 4 of the Interstate Commerce Act. The bill (S. 2147), which was introduced February 1, 1924, by Senator Gooding, Idaho Republican, passed the Senate May 19, and is now before the U. S. House Committee on Interstate and Foreign Commerce.

9—Extracts from Address before National Rivers and Harbors Congress, Washington, D. C., Dec. 5, 1923.

10—Extracts from address before Atlantic Deeper Waterways Association, Nov. 11, 1923.

11—Extracts from The American Transportation Problem by [illegible] Hines Peyton, 1909.

12—Extracts from American Inland Waterways, by Herbert Quick, 1909.

13—National Inland Waterways, Oct., 1923.

14—Extracts from speech before Atlantic Deeper Waterways Association, Sept. 18, 1924.

15—Extracts from Report of the Joint Commission of Agricultural Inquiry, Transportation, 67th Congress 1st Session. House Report 408, Part 5, 1921.

16—Extracts from address before Lockport Rotary Club, July 18, 1924.

17—Hearings before U. S. Senate Select Committee on Nine-Foot Channel from the Great Lakes to Gulf of Mexico, on S. 4428, 67th Congress, 1st Session, Oct., 1923. No report was made by the Committee.